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Bouchard as a Prophet

"IN the intestine, infection is constant. In every individual and at all times, the agents of intestinal putrefaction are to be found in the intestinal lumen, giving rise to toxic products that the intestine absorbs, and intoxication of varying degree is extremely frequent. That this intoxication is not more frequent, that it is not of daily occurrence, is, because the organism is provided with means of self-protection; and it is the liver that acts as a barrier to the poisons."—Bouchard.

It has been many years since the brilliant Frenchman quoted published his epoch-making book. Plenty of time has been afforded to test his theories and to try them out in practice. The discussion of this theme has been world-wide, and it may safely be asserted that every possible objection has been made and fully considered. The result is, that the question of intestinal infection has become one of the subconscious bases of medical thought and practice; the contention concerning it today being limited almost to the question as to who is to have the privilege of coping with this condition—the internist or the surgeon.

Hats off to the surgeons! No sooner had the internists demonstrated the extent and the fruitfulness of this new field, than the men of the knife displayed a strategy truly Teutonic—they moved in and took possession. Lane showed himself a Hindenburg. Armed with scalpel and bistoury, hemostat and catlin, the chirurgic army flowed through the breach made by him and occupied the land; and at present they are discussing whether the intestinal kink is the preferable reason for operating or whether it is some other condition in the belly.

The principal element contributing to the success of the Bouchard theory was, that it fitted in exactly with what had been common knowledge among the medical profession for centuries. Our fathers knew the benefits that followed a thorough emptying of the alimentary canal, however crude may have been their explanations of the phenomenon. Many things there are that we know or are cognizant of but unable to prove. I, for instance, know that the Michigan peach I may be eating is delicious, but I should be at a loss to prove it, or to give an explanation that would satisfy the demands of modern science. I have nothing but clinical evidence to proffer in support of my opinion, and I admit the variable and fallacious nature of such testimony. Nevertheless, I cling to my

conviction that the peach is good to eat. In the same way, I know that the vast majority of the cases of intestinal infection and fecal autotoxemia that come before the practician are amenable to treatment by means of hygiene and drugs and that only the exceptional ones demand mechanical measures. The doctor who fails to recognize these exceptions and keeps on giving laxatives, when there is present a kink in the gut, a tight sphincter or some other mechanical obstacle, is not a good doctor. And the man who is ready to "operate" in every such case is—a good business man.

Much useless or injurious medication can be avoided if one sees clearly what may be the true object for therapeutic intervention. Giving laxatives is only a temporary expedient, a palliative, not a cure. There may be defective innervation of the intestinal tract, defective muscular activity, or defective secretion, with costiveness. The cure in every case must start with a regulation of the habits, the diet, the personal hygiene.

The anticonstipation combinations are excellent, if they are employed to restore regular activity of the bowels; they are injurious, if given simply to obtain relief. Dryness of the fecal mass demands different remedies—and some day we may agree with the followers of Thomson as to the value of lobelia, in this condition at least. So as to the purgative salines—they are valuable, if not abused. The patient feels so good when the wickedness has been purged away from the neighborhood of his abdominal brain, that he goes on contentedly, taking a purgative dose every morning, gradually increasing as the natural action of the intestine is supplanted and weakened by the adventitious aid given; until in time he begins to grow uneasy at the increasing intestinal torpor, and seeks advice.

Rogers, of India fame, has demolished the most cherished contention of the pessimists—that the alimentary canal can not be rendered aseptic. He has shown—and many others have verified his contention—that emetine really does destroy one of the most dangerous organisms that thus far have been found to inhabit the bowels, that is, the entameba. This carries with it the presumption that other intestinal parasites may be affected by this, that or other agent. We, most assuredly, do not know all the microorganisms that are having their habitat here, nor know what mischief they are brewing. The demonstrated effects of emetine strengthen our contention that, when widespread clinical observation indicates that an agent such as zinc sulphocarbolate administered in certain dosage is followed by decided beneficial changes in the condition of the patient, we should discuss how and why the benefits are produced, instead of obstinately denying them, because certain experiments have failed to rid the bowels of all microorganisms of every species.

The premise that every such organism must be destroyed, or else no benefit can result, is not warranted by any evidence that has ever been placed before the scientific world. Manifestly, that doctrine is false, and is put forward in a spirit of captiousness, rather than in a sincere and impartial desire to ascertain the truth. It was this same spirit that prevented the erection of modern fortifications about Antwerp, when the British engineers had pronounced the ancient defenses obsolete and unreliable. The result we know.

The average American physician is a curious character. He has a will of his own, and a thinker in his head. He does not lead well. He always has something of his own back, and receives the other man's views simply as material from which he draws his own conclusions. He is reticent, and one has trouble to draw him out and to induce him to air his views. He is disposed to give due weight to the other man, but not to pin his faith on him unreservedly. He is modest as to his own resources and always ready to try out the new things, but he reserves judgment on them until personal observation has enabled him to form an opinion of his own. He is hard to convince, he is disposed to question the testimony of the man who has goods to sell to him, but does not condemn him unheard on that account; when, however, you once have won him, he is yours for life, unless you try to take advantage of his confidence. You may goldbrick him once; you can not goldbrick him twice.

The American doctor has persisted in using the intestinal antiseptics, not because Bouchard urged them or any other great authority has sanctioned them, but because he himself put them to work and got unmistakable benefits from them.

You can not convince the man who knows a thing for himself. Herein lies the vast strength of any really valuable remedy, and equally the certain fate of the fake—for, it is the doctor himself who is judge and jury, the court of last resort. Nobody knows as well as does the doctor the real value of any method of treatment. That some famed man

in Germany or in France or in Thibet claims good results from a remedy, does not matter so much; but, if Doctor John Jones of Hickory Corners gets good from it, that is the remedy that John Jones henceforth is going to use until he gets a better one. All the printers' ink in the world can not sustain a useless drug.

The melancholy days are come,
The saddest of the year;
Of wailing winds, and naked woods,
And meadows brown and sear.
—W. C. Bryant.

PAUL EHRLICH

The world of science has suffered a great loss in the death, on August 20, of Dr. Paul Ehrlich, director of the Royal Institute for Experimental Therapy at Frankfurt-am-Main, in Germany. We are unable to give the cause of his death, an occurrence totally unexpected in this country. Doctor Ehrlich was relatively a young man, having been born March 14, 1854, in Strehlen, Silesia; thus being only a little over 61 years of age at the time of his demise.

Ehrlich was of Jewish parentage, received his academic education in the University of Breslau, later taking the degree in medicine at Strassburg. As a student, it is said, he was not brilliant, probably because even in the beginning of his career he had begun to specialize upon the particular branches of physiologic chemistry with which his name has been so prominently identified during later years.

Probably no man who has adorned our profession during the last half century has contributed more of practical value to the development of medical science than has Paul Ehrlich. Three things of the utmost importance in the healing art are associated with his name, the first of these, in point of time, being the side-chain theory of immunity. After that, there came the standardization of the dosage of diphtheria-antitoxin; while, the third, and last, was his discovery of salvarsan. Although these three discoveries, on their face, seem to be totally separate and distinct, as a matter of fact they are closely allied, all of them growing out of Ehrlich's conception of the body-cell as something distinctly chemical in character and structure and subject to the same possibilities of forming combinations with other substances as the benzol ring itself.

Ehrlich's theory of immunity has done more, perhaps, to change our concept of the nature of infection and to modify our ideas relative to the methods of combating infection than has any discovery heretofore made. The marvelous advances in biologic medicine and Ehrlich's adventure into the realm of the *sterilisatio magna* all hang upon the verity of this hypothesis.

The death of Doctor Ehrlich will be felt as a great loss to the world.

THE SUBTLE MISCHIEF OF SURGERY

Writing upon the relation of mouth infection to systemic disease, Martin H. Fischer, in *The Lancet-Clinic*, makes this significant statement:

"Of thirteen cases of trifacial neuralgia, which Fletcher (of Cincinnati) studied, he relieved twelve by proper treatment of infections about the teeth. I always like to compare with this record that of some of my surgical friends who have handled the same distressing condition in other ways. A popular method with them is, to pull out the fifth nerve by its roots. In other words, the telephone bothers them, so they rip out the line. They have other ways also of handling the situation. Instead of recognizing the true origin of the trouble and locating it, as is commonly the case, in the teeth, the surgeons kill the nerve or they paralyze it with alcohol."

Whether Doctor Fischer meant to do so or not, he has here laid his finger upon the essential weak spot in surgery. With all due respect to the great importance and the wonderful achievements of surgery, and with a full recognition of its life-saving benefits, it must be admitted that, except in the case of certain mechanical conditions—in which it is, of course, the sole available remedy—surgery, after all, constitutes a compromise, an expedient, a confession of weakness and ignorance. An exceedingly valuable compromise and an indispensable expedient in the present state of our knowledge, a most welcome resource in our therapeutic helplessness, it is true; but, still, a compromise, an expedient, a confession none the less.

This truth will, no doubt, be freely admitted, even by the most enthusiastic surgeon—argumentatively, at all events, whatever he may do in practice. But there's the rub. Turn the sentence around, and we shall see at once the far-reaching danger that lurks in surgery, which Doctor Fischer has so plainly brought to light. Whatever the surgeon may admit, argumentatively, as to

the compromise-character of his methods, he goes right on practicing them, as though they were in fact the ultimate and ideal procedures. And, as he practices, he refines and perfects his technic. And in this very refinement and perfection of surgical technic lies the subtle danger to real medical progress.

Astounding as it may sound to those who have been accustomed to stand entranced at the shrine of surgery, dazzled by its witchery, fascinated by its dexterity, and, above all, hypnotized by its *success*, it nevertheless is true that this very success of surgery—the ease and safety with which it is performed and the brilliant "results" obtained—is, in many respects and from the broadest viewpoint, a curse rather than a blessing to medicine. For, in the exquisite development of incredibly skilful technic, it comes about that it is a great deal easier and quicker and (for the time being) safer to amputate or excise the offending organ or part than to investigate the underlying cause of the trouble and endeavor to remove it by curative measures. Thus, all incentive to study the functional pathology and rational therapy of those conditions in which surgery is so "successful" is withdrawn and the occurrence of such conditions (as of appendicitis) actually is multiplied.

As a matter of fact, the brilliant accomplishments and the overwhelming dominance of surgery during the last few years of the nineteenth and the first few years of the twentieth century *did* set back the advance of therapeutic medicine to quite a serious extent. During that period many ingenious operative procedures were devised and many really marvelous mechanical feats were achieved in the invention and manufacture of surgical instruments; but virtually nothing was learned of the nature and course and cure of the diseases for which these devices afforded so prompt and simple a relief.

Happily, the tide has turned. Doctor Fischer's utterance is but one of the numerous signs that it has thus turned. And it is significant to observe what astonishing strides curative and preventive medicine have made in the relatively short time since surgery ceased to dominate and hypnotize the profession.

We should not be thought as belittling the value of surgery or as denying it a place of usefulness and honor. But, surgery is, or should be, medicine's handmaid, not its lord and master. It cannot, and never will, replace curative and preventive medicine. Its principles and methods—those of lopping off the stem and branch—are antagonistic to those of medicine, which aim to lay the ax to the root. Seldom, indeed, is surgery basic; medicine always is, or at least seeks to be that. As Doctor Fischer quaintly points out, to tear out the line, hardly is the rational way to remedy a faulty telephone. One can easily see how in an emergency—when, say, there is danger of firing the house—it actually might be the highest wisdom to rip out the wires, and the quicker the better. However, such a procedure scarcely can be commended as the routine method of dealing with faulty electric systems.

"He that hath ears to hear, let him hear."

The Poet Riley sings of fall, and the strutting turkey cock,
"When the frost is on the pumpkin, and the fodder's in the shock;"
Of the crisp and hazy landscape, and the sunshine over head;
Of the stubble and the straw-stack, and the reaper in the shed;
Of the poultry in the barn-yard, and the appetizing air;
Of the furries and the meadow, and the sermons that are there;
Of the "pictur" that no painter has the colorin' to mock,
"When the frost is on the pumpkin, and the fodder's in the shock."

—Dr. H. C. Bennett.

EMETINE IN TYPHOID FEVER

Everyone should read Doctor Carriger's little article, published elsewhere in this issue, in which he gives his experience with emetine in typhoid fever. Doctor Carriger has recently treated four patients by the method advocated by Frazier, as described some months ago in *The Medical Record*, of New York. There is little doubt as to the correctness of the Doctor's diagnosis, the symptoms described being typical of typhoid fever. The results obtained were as gratifying as those reported by Frazier, the course of the disease being cut down to less than a week in every one of the four cases in question.

Last month Doctor Burkard, of Omaha, gave his experience with one case of typhoid fever treated with emetine, and he likewise succeeded in jugulating the attack. While recognizing, of course, that a single experience is of comparatively little value from a statistical point of view, the fact that in even this one instance (in which the diagnosis, verified by the Widal test, was unquestionable), the disease responded so amazingly to the emetine treatment, should be sufficient to inspire every physician with interest

enough to give this alkaloid a careful trial at the first opportunity.

We hardly can hope that emetine will prove a "specific" in typhoid fever. In all human probability, it will fail utterly in a certain percentage of cases, and it may possibly prove of comparatively little value in a very large number. Nevertheless, if the success obtained by others with this remedy even remotely approximates that reported by Burkard, Carriger, and Frazier, we have added to our armamentarium a remedy of exceeding importance.

In spite of the promise of emetine, no physician should think of treating any typhoid-fever patient without simultaneously resorting to the remedies that have been tried and found true. And, while there are many such of demonstrated value, there is nothing that surpasses the sulphocarbolates in this disease. This has been the experience, not only of ourselves, but also of the thousands of other physicians who have learned to rely upon this remedy.

We suggest trials with emetine, in the hope that we may be able to add one more to such a remarkable group as that containing the sulphocarbolates, the Bulgarian-bacillus cultures, and the typhoid-bacterin. Who can, and will, report on emetine?

There is but one rule of conduct for a man—to do the right thing. The cost may be dear in money, in friends, in influence, in labor, in a prolonged and painful sacrifice; but the cost not to do right is far more dear; you pay in the integrity of your manhood, in honor, in truth, in character. You forfeit your soul's content, and for a timely gain you barter the infinities.

—Henry Ford.

"GETTING TOGETHER" INSIDE THE MEDICAL PROFESSION

Even her enemies concede that Germany's strength lies in her wonderful system of organized cooperation, in which each unit is utilized to the fullest extent of its specialized value, for the advantage of the whole. And if, as is asserted in various quarters, one of Germany's purposes in going to war was, to spread her system and methods among the nations of the world, then I am inclined to think that she already has accomplished her aim to the extent to which such an object ought to be accomplished—for, of course, such a system has its dangers as well as its advantages, and, at least from the Anglo-Saxon point of view, ought not to be adopted as a whole. However, there is in that system much that might profitably be copied by our more happy-go-lucky workers; and, as I have said, Germany has actually succeeded—maybe by a little different process than she intended—in planting these ideas of hers on other soil; for, in many of the nations, including even her enemies in arms, the admiration of her efficiency is leading men to examine her methods thoroughly, with the object of picking out what seems really good in them, and to copy it.

There are signs that this spirit is beginning to permeate even the medical profession of this country. The physicians of Valparaiso, Indiana, have organized themselves into a co-operative association, with the object of reducing all the impedimenta that are attending their individual efforts to a minimum and of raising their efficiency to a maximum; for the advantage both of themselves and of their clientele. The association will use one common reception-room, while each member maintains a private consultation office. The common quarters will be provided with such accessory facilities as pertain to the common necessities of the members, such as an electrical and radiographic room, laboratory, drugstore, and library.

"In all lines of human endeavor," says the spokesman of the combination, in announcing the plan, "men are coming together in groups—working, studying, economizing, specializing, effecting more perfect organization—thereby delivering a more efficient service. The medical profession, like other agencies, has tended toward organization and specialization. Doctors are beginning to realize that organized service is more efficient than individual service." And he might have added that the public is beginning to realize it, too, and to demand and to patronize organized agencies of service.

One of the advantages of this arrangement, of course, will be its economy, without any impairment of adequacy. As the representative of the Valparaiso association points out, the practice of medicine today requires larger financial investments than ever before, and there is an ever-growing number of indispensable scientific inventions. Few physicians, working alone, can afford the equipment that really is necessary for thorough, efficient service.

By the plan here put into operation, this expense involved will be pooled among the members of the group, without in the least subtracting from each man's individual equipment, but, rather, amplifying it. In addition, the "operating-expense" of practice will, likewise, be pooled—office rent, telephone, clerical

work, bookkeeping, collection of bills—thereby not alone reducing each man's financial burden, but insuring a much more systematic and satisfactory conduct of all this routine detail.

Important as this economic aspect of the matter is to the physician himself (and far be it from us to belittle its importance), the plan embodies a still larger and more pregnant significance in its relation to the public. As I intimated at the start, these Valparaiso physicians have wisely adopted only the useful elements of this organized cooperation-idea.

In the scheme, as they purpose to carry it out, there will be no suppression of individual effort, but, on the contrary, this side is to be accentuated; for, the nature of the arrangement not only permits, but it inevitably promotes, the development of each individual member's personal *forte* to the highest degree of specialized efficiency and its exercise to the fullest and freest extent in his practice. The collective work of the group will naturally fall into a logical and selective division of labor, in which each one individually will soon find himself doing only the special particular kind of work for which he may be best fitted, leaving the other branches to those other ones better qualified respectively in the other departments. Thus the public will derive from the plan the immense advantage of specialized skill at the minimum economic cost of service.

"Finally," explains the spokesman of this group, "we are human. We have to eat and want to live, and we hope to lay up enough in store to be self-sustaining in old age." Which, after all, is not a *wholly* selfish ambition, either; for, the building up of a competency that shall make one self-sustaining in old age cannot be regarded otherwise than as a definite contribution to the stability and prosperity of the community.

Here, then, is a splendid example for the profession at large. Why, come to think of it, the Germans have no patent on the idea, for this journal has frequently urged upon physicians the general desirability of this very plan which our Valparaiso friends are now engaged in working out in detail. Great credit is due to them for this departure. They have broken ground. They have exhibited a wise daring. Instead of standing helplessly around, bewailing the hard times and the high cost of living, they have taken the bull by the horns and met the demands of the hour.

The Valparaiso doctors are right. The time *has* come when medical men, like those of every other industry, *must* "come together in groups, working, studying, economizing, specializing, effecting more perfect organization, and thereby delivering a more efficient service." It is the only way to aline oneself with the all-powerful, all-sweeping *Zeitgeist*. These men in Valparaiso are showing the way. Who will follow?

It is characteristic for misanthropic critics to blame us for preserving inferior individuals, but not to object to wholesale destruction of strong men. For the strenuous foolhardiness which still sees virtue and happiness in warlike enterprises, forgets that by war the flower of the land's men, and not weaklings, are killed or rendered invalid or demoralized, and that the lower strata of vigor remains behind to multiply, and to transmit their own diseases or physical inferiority or predispositions. No infectious disease ever left the people in as low a physical, moral, and economic condition as does a war of equal duration or ferocity.—Abraham Jacoby.

A QUACK'S EPILEPSY CURE

While we may, and do occasionally, take exception to some of the things published in *The Journal of the American Medical Association*, in the name of "reform," there are many more things which we can heartily endorse. Thus, in the number of the *Journal* for September 4, there appears an exposure of "Grant's Epilepsy Cure," a secret nostrum disposed of to the laity by an advertising physician of Kansas City, Missouri.

Regarding this remedy, Grant says that "There is nothing injurious to the system in this medicine"; and yet an analysis of the mixture, made in the Association's laboratories, shows that each teaspoonful contains approximately 10 grains of potassium bromide, while the directions on the bottle call for "two teaspoonfuls after breakfast and the noon meal and three teaspoonfuls on retiring." In other words, potassium bromide is given in this remedy—which contains "nothing injurious"—in a total daily dosage of 70 grains. That the indiscriminate administration of such large quantities of this powerful drug to people of all ages and conditions is perilous in the extreme, is shown by letters, received from physicians, which the *Journal* prints.

While there may be occasions when medicinal agents of unknown composition may properly be recommended for lay administration, it will certainly be admitted by everyone who knows anything about such things, that powerful sedative drugs like potassium bromide, poisonous drugs like strychnine and arsenic, and narcotics like opium and its alkaloids, cannot be included in this category.

The Association is to be commended for letting light into the methods of quacks and

crooks, and for showing the dangers inherent in the indiscriminate sale of remedial agents of this character. It is to be hoped that the medical profession will see to it that exposures of this character are given proper publicity among the laity.

THYPOID-FEVER PROPHYLAXIS

We hope that every reader of CLINICAL MEDICINE will look up the short article upon the prophylaxis of typhoid-fever, which we are printing this month in the department of What Others Are Doing. In this article, the United States Public Health Service submits evidence as to the value of prophylactic anti-typhoid-vaccination, demonstrating conclusively that there no longer is any question as to the efficiency of this expedient. Being of definitely proven value, it is one of the things that no physician should ignore or neglect.

The importance of anti-typhoid vaccination needs to be brought home to every member of the medical profession at this time of the year, when the disease is prevailing widely in many parts of the country. The time is coming shortly when health-bodies everywhere will follow in the steps of the North Carolina State Board of Health, which even now is advocating, and practicing, the vaccination of whole communities in the old North State. What are you doing in your vicinity?

No man can be both a dreamer and a man of action, and we are called upon to determine what role we shall play in life when we are too young to know what we do.

—Richard Middleton

A WAR SILHOUETTE FROM POLAND

A peasant-hut in Poland—seemingly ready to collapse—straw thatching—one low dark room of 9 × 14 feet, with one door so low that a medium-sized man must stoop to pass through, and one wee-small window, the equally small panes of which are patched together with brown paper—beaten clay floor—open tile hearth in one corner—stall with two sows and a dozen chickens adjoining and reached through a connecting door—such is the field "hospital" for the sick soldiers, described by one of three Austrian military surgeons occupying it for an indefinite stay, that is, for as long as the nearby trenches are held by these forces. We find this account in the *Militaerarzt* for March 13, page 79.

The only other occupant of this stately "hospital" is the elderly peasant-woman owning this miserable human abode. The "bed" of these tired, overworked men in the service of humanity is a bit of worn straw, malodorous from the moisture of the ground and from having long served many other preceding brothers in arms as mattress; the three Red Cross men sleeping stretched side by side in a narrow space beside the hearth. A cheap, smoky, stinking oil-lamp furnishes "light" for first-aid work during the late and early hours of the winter-months. The old woman does some cooking and also gives aid as a nurse.

As the day's work begins and the suffering men come streaming on to seek aid, not more than two at a time can be admitted to the "lazareth," while the "waiting-room" for the rest is under the blue, or, more often, the drizzling celestial dome, and the miserable creatures, victims of a civilization gone stark mad, while waiting their turn stand ankle-deep in the mud and filth surrounding the hut. "And thus we three have been spending here a number of weeks; we three landsturm doctors who, a few months ago—or was it years or decades, the time peace reigned still in these lands—had no thought of exchanging their specialized practice, prosecuted for many years, with military activity in uniform."

Here they come, day after day, the same typical cases: catarrh of the air-passages, catarrh of the digestive apparatus, all forms of rheumatic conditions. And, by the way—so the narrative runs—the instant the doctor puts on the uniform, he must change many of his ideas and accustomed practices; a metamorphosis, we are assured by the author, many a one finds difficult or even impossible.

For the sick soldier in the field, especially during the cold of winter, hygiene and sanitation are of greater importance than are drugs, generally speaking, but these very things often are almost unattainable; the men, laden to the limit of endurance, are tired, but may not rest; they are wet through and through, but can not dry their garments and shoes; they are cold, but protection cannot be had; they should be in bed, but must remain in the ranks and sleep on the rain-drenched ground; the doctor prescribes a sick-diet, but they must eat whatever coarse food is available, and at whatever hour; they are threatened with punishment for drinking aught but sterilized water, but men parched with thirst will defy the world and suck the dirty, disease-infected fluid from a mud-hole.

How, then, pray, can the doctor help? Wonder above wonder that the armies of to-day, recruited from what we like to consider a decaying humanity, are not decimated, annihilated by disease rather than by the enginery of war! And, yet, we are told that those men actually are gaining in robustness (the greater proportion); and, who knows, the survivors of this cruel man-hunt actually may inoculate our daily life with a more sanitary mode of living.

The worst enemy, as the author points out, is humidity, and the trench-existence is a thing of horror. "One must have lived in such a trench to realize how illusory are all attempts at keeping dry in rainy weather. From all sides the water rushes in, and nowhere can one find a spot to sit or kneel down without getting the clothes soaked through; even the blanket in which the man rolls up for a rest soon is thoroughly saturated. For three weeks, and longer, the entrenched enemy troops lie opposed, drenched by continuous rains, and without a chance at action. No possibility there for the men to get out and exercise—they dare not expose themselves—and all the while the nerves at highest tension. The field kitchen cannot venture to make the needed visits, the food grows scarce, the water-flasks are empty, and the frantic men drink the water in which they have been standing for who knows how long, water befouled (at least indirectly) with their own excrements. Any wonder those men get sick?"

And here is the sad, the tragic feature of this whole sad, tragic business. Says the anonymous writer, from whose account the military censor erased numerous passages: These men are offering to their fatherland the highest that one can give, the soundness of their bodies and their very lives; the medical man finds them suffering, knows what could and should be done for them, knows that those things recounted in the beginning would set them right again; but, with aching heart, the doctor finds himself thwarted—dry quarters, rest, warmth, hot drinks and regulated diet, none of these can be provided, except for a few, sometimes.

"Full well knowing the utter futility under the circumstances, the doctor prescribes a few medicaments—together with a dietary that cannot be provided—and the man suffering from a gastroenteritis is told to return to his company; or, another, having an attack of influenza and a fever-temperature, is put on a bunch of old straw on the floor of the unventilated space underneath the straw-thatched roof (reached by a rickety ladder), and after a day or two he also is ordered back to the ranks; or, yet another, whose every muscle aches and pains because of the exposures, gets a little massage and a dose of a salicylate, and is told that he, like the others, must consider himself fit for the strenuous work of a field-army and to serve as fodder for the cannon's mouth. 'You are needed at the front, men, you cannot be spared. So, *allons enfants!*' "

Awful is that strife without, the whistling of the bullets, the howling of the shrapnels; but more awful than it is the strife in the earnest physician's soul, of him who longs to help and succor, but whose arms are paralyzed by insuperable conditions.

Though I have been trained as a soldier and participated in many battles, there never was a time when, in my opinion, some way could not be found to prevent the drawing of the sword.—U. S. Grant.

VACCINATION-TETANUS

It may be, as oft asserted, that Truth is immortal and can not be destroyed. Be this as it may, the unkillableness of Error is a thing one does not have to demonstrate. Under constantly developing new forms, the ancient falsities that formed stumbling-blocks for our faraway forbears keep on resurrecting with hydra-like persistency.

When Jenner announced protective vaccination as a principle, his claims were received with incredulity. No wonder. The discovery opened up a new line of human knowledge, and there was not at the time a solitary fact in the world's ken with which it harmonized. But gradually it won credence, except with the sturdy opponents who did not intend to be convinced and were not convincible. And these unprogressives have left us many descendants.

The tactics of the antivaccinationist are uniform. He makes sweeping statements, vivid in their coloring, then calmly leaves us to disprove them. Not a scintilla of proof does he deign to proffer. He gravely tells us that vaccination is "the mark of the beast" mentioned in Revelations, and tells us to disprove it if we can. However, when we can get him down to dots, we have a chance; so, when he refers to tetanus as caused by vaccination, such a chance is open. Not that he cares a doit—he drops that point and goes on to another, without a trace of care or conviction.

The Public Health Service has studied this tetanus-problem and worked it out with its customary precision. Thus, from 1904 to 1913 over 31,000,000 vaccinations were performed in this country. In 41 cases, tetanus followed. One distributor disposed of 209,000 doses of virus within a period when five cases of vaccination-tetanus occurred in this country. In a part of these tetanus-cases, the Government secured unused portions of the virus the use of which had been followed by tetanus. This virus was examined in the Hygienic Laboratory in ways that made it impossible for any tetanus-germ to escape. None were found.

In the army and the navy, 585,000 men were vaccinated, and among these 6 cases of tetanus followed. The vaccine, in every instance, was found to be uncontaminated.

In the 41 tetanus cases above mentioned, the time between vaccination and the outbreak was 20.7 days; the mortality was 75.2 percent. But, with this mortality, the known period of incubation is only ten days. This throws the beginning of infection into the period when the vaccination-sore is open and discharging, hence, liable to contamination.

Then the Hygienic Laboratory took up a question that rationally might have been the starting-point, namely, Can tetanus be transmitted in connection with vaccination? Rhesus monkeys and guinea-pigs—both susceptible to vaccinia and to tetanus—were vaccinated with virus known to contain tetanus-germs. Most of the vaccinations "took," but not one of the animals contracted tetanus. It has yet to be proved that these two germs can become established side by side when present in the same medium; but, then, the antivaccinationist does not prove things, he only propounds riddles for others to unravel.

The creed of the foe of vaccination is extremely simple: anything that happens to a child any time within a number of months after vaccination was caused by that infection. Even that the ensuing malady was not infectious and is not transmittable by means of inoculation, makes not the slightest difference; it may be a runover by some vehicle or a kick from a mule—but the vaccination was followed by death, so, consequently, that must be held responsible. The following was one of many such cases investigated by this writer and is cited as a fair sample:

A child was vaccinated in school and on the next day came down with scarlet-fever. As a matter of course, the vaccination was blamed by the parents. Investigation brought out the fact that about 20 other children were vaccinated on the same day and from the same child's arm—we used humanized virus then—and not one of these had scarlet-fever, and neither did the child from whom the virus was taken. The incubation period of scarlet-fever never is so short as a single day; the child who in school occupied the seat next to the girl in question was at the time at home, sick with the same malady—that is, scarlet-fever, and was ill the last day it had been in school.

Here, the proof was complete, and there was stopped at the start what was developing into a very promising tale for the "antis." But, suppose this undeniable proof had not been available? Vaccination would have been blamed for at least a possible infection, and so gone down in print.

Ruby wine is drunk by knaves,
Sugar spends to fatten slaves,
Rose and vine-leaf deck buffons;
Thunder clouds are Jove's festoons,
Drooping oft in wreaths of dread
Lightning-knotted round his head;
The hero is not fed on sweets,
Daily his own heart he eats;
Chambers of the great are jails,
And head-winds right for royal sails.
—R. W. Emerson.

IS IT SO EASY?

In a recent comment upon a compilation of data gathered by state boards of health and state food- and drug-inspectors, in which it was declared that "fully fifty percent of the more widely used preparations do not comply within reasonable limits with official requirements," the chemist of the Maine Agricultural Experiment Station, made the following statement: "It is rather startling to find that half of the pharmaceutical preparations examined, which are as simple to make as a batch of biscuit, differ more than ten percent from the standard."

It may, indeed, seem surprising to learn that fully half of the official preparations dispensed on physicians' prescriptions are not up to the standards required by law. We feel quite sure, however, that the chemist just quoted has not placed the responsibility for this condition in the right quarter. Epigrammatic statements look well in print, but they are suspicious at all times and often they are untrue. This one assuredly is untrue—that it is as simple to make pharmaceutical preparations as it is to make a "batch of biscuit."

Anyone giving wide publicity to this impression is doing the pharmaceutical body, retailers and manufacturers as well, a great injustice.

Everyone who knows anything about the manufacture of medicinal preparations understands the very great difficulties involved in making medicinal preparations that are uniform, potent, and permanent. There are many factors that have to be considered: the raw materials must be of good quality; changes or losses during manufacture must be guarded against; dependable methods of testing must be developed; in many instances, animal-tests are necessary; manufacturing processes must be devised and elaborated; the influences of heat, light, and moisture upon depreciation must be considered; and every minute stage and process of manufacture and marketing must be watched by the eagle-eye of the "boss" who knows.

In order to turn out preparations that can be depended upon to come within the 10-percent variation referred to, it is necessary that production be controlled by highly educated chemists, pharmacists, pharmacologists, and by various other technical specialists. To produce pharmaceutical preparations of the standards now required, not alone involves careful scientific supervision, but large investments in equipment and machinery. It is practically impossible for the retail pharmacist today to improvise even the common or "garden-variety" of tinctures and fluid extracts from crude drugs with any expectation of accuracy, and, as for dispensing, extemporaneously, his own pills and tablets of delicate chemicals and powerful alkaloids in accurate dosage with the ease involved in "making a batch of biscuit," why, this is fully as difficult as for our Maine chemist to predict what is going to happen to the Czar and the Kaiser during the next sixty days.

Furthermore, galenic preparations are, from their vary nature, variable, changeable, and uncertain. We doubt whether anyone, no matter how skilful, can make up tinctures of aconite and of digitalis that will uniformly come within the 10-percent dead-line of the official standards—and remain there for six months. A variation of 25 to 100 percent in the preparations offered by good concerns is not at all uncommon. Look up Hale's report on digitalis, and Robinsons' investigation on aconite. (Read the editorial in last month's CLINICAL MEDICINE, page 799.)

The simple truth is, that our chemist is skating on thin ice. The problem of pure drugs is a far bigger one than he intimates, and, in a snap-diagnosis of the ailment, he has not been quite fair to a great industry.

At this point, my secretary interrupts my dictation to remark that "Mr. Chemist evidently doesn't know much about making biscuit—it isn't everybody who knows how."

I suspect that the young lady questions my own technical training in this direction. It is true, there is a vast difference between the sodden and indigestible samples of inspissated dough falsely and feloneously designated as "biscuit" in some quarters, and the flaky wheaten confection so delicately fashioned by the feather-light fingers of some New England or Virginia housewife of "the old school." Her biscuits are as white as a young girl's neck, as easily digestible as flattery, and as delicious as first love. Eaten with Vermont maple-syrup of the "first run," they seem to be transmogrified, without intervention on the part of the stomach, into the undiluted milk of human kindness!

Did our Maine chemist have *this* kind of biscuit in mind? If so, we apologize!

Now forget your haste, just for a second or two, let go pushing the train you are riding in, stop trying to do all your work at once; and perceive how deliberate, how regal, how indolent your soul is, how sure of itself, how indifferent to the petty chances of punctuality or accomplished toil.—Bliss Carmen.

A WAR-TIME OPPORTUNITY

Gauss and Kroenig have presented to them the chance of a lifetime. Taking it as true that they possess that faith in the method of twilight anesthesia attributed to them by the magazines, they have a far wider field than that afforded by an obstetric clinic.

Men are being shot down by the tens and hundreds of thousands. Many of these suffer painful wounds, and are left perhaps for days without any but the most primitive first-aid dressing. The surgeons are with the hospitals in the rear, well out of harm's way. Many a wounded man may die of his injuries, and especially of hemorrhage, before he reaches the distant source of aid. It is obviously impossible for a surgical depot with skilled anesthetists to be away up in the front.

But the surgeon or a qualified assistant may be there; and, armed with hypodermic syringe and vials of the hyoscine-morphine anesthetic tablets, be ready to administer the remedy promptly. To relieve suffering and, through the mydriatic, check hemorrhage, surely that is worth while. Even in this gigantic con-

flict, such an expedient means a sparing of enough danger and suffering, a saving of enough lives, to make the suggestion worth while.

We know that many American surgeons, if confronted with this problem, would think at once of hyoscine and morphine.

Men of breeding, sometimes men of wit,
T' avoid great errors must the less commit.
Neglect the rules each verbal critic lays,
For not to know some trifles is a praise.
—Pope.

OVERWORK AS A CAUSE OF SUICIDE

Every little while we hear of the suicide of some man or woman—usually a young man or woman—and the report of the case, as we read it in the daily press or as it is told by relatives and friends, states that the act was attributable to overwork, by which is meant, of course, excessive mental work on the part of the deceased. No one ever is heard to have committed suicide because of excessive physical work; and especially is this the common verdict in cases where the suicide happens to be that of a young man or woman who was attending school or college at the time of the tragedy.

We do not accept this popular notion that excessive brain work leads to suicide. To begin with, the class of persons who commit suicide are not, as a rule, the kind of individuals who give themselves very strenously to brain work. History and experience both testify that the real brain-worker rarely kills himself. Why, indeed, should he? The man who works with his brain has a sphere of life that is all his own—"his mind to him a kingdom is." Within this glorious kingdom he is absolutely supreme; neither time nor money drives him, because neither time nor money have existance in his realm. His is an orderly, leisurely kingdom, containing none of the pressing practical problems that drive men to despair.

But there is another, more scientific reason why excessive brain work is unlikely to lead to suicide. Our remark, interjected above, that nobody has ever been known to commit suicide from excessive physical work, may have sounded like a cynical sneer. It was, in fact, a most significant comment. It is a truism that physical labor, no matter how hard or continuous, of itself drives no one to self-destruction. Not even when pushed to the limit of utter exhaustion, of fainting, of collapse, does physical toil of itself incite any desire to kill oneself. There undoubtedly have been those who, worn out with ceaseless and hopeless toiling, have given up the battle in sheer bafflement of spirit; but that was a moral and spiritual exhaustion, not a physical one.

If this be true, why should we suppose that mental work, no matter how prolonged or arduous, should arouse a desire for self-destruction? For mental work does not even have the monotony and dead hopelessness that many forms of physical work have. There are always results from mental labor, or it is not labor. And no man seeks death while he is getting results.

The fact is, there is a great deal of nonsense talked about this matter of overworking the brain. The purely intellectual capacity of the brain cannot be overworked. No man's power to think can be impaired by exercising that power. That which we loosely call mental break-down is the overstraining of the physical tissues, especially the arteries and nerves, in a primarily defective body. In an otherwise normal person, physical tire will stop brain work long before the latter reaches even the point of fatigue. The real cause of ninety-nine percent of the suicides is temperamental, not mental, and is rooted in biological defectiveness.

Do it yourself—don't look nor wait for a pull. You remember the pathetic parable the greatest of all teachers has left us, of the paralytic who waited year after year at the pool because he "had no one to put him in when the water was troubled." He continued a wretched paralytic. Don't wait for help or pull—jump in or roll in; fall in some way—but get in.—Henry Ford.

WHAT ARE THE "USEFUL" DRUGS?

For some years past, a movement has been on foot to restrict the instruction in materia medica in our medical schools to a relatively small number of drugs and preparations. The desirability of such restriction is discussed by Martin I. Wilbert, in *Public Health Reports* for August 27. Mr. Wilbert speaks as a representative of the Council on Pharmacy and Chemistry of the American Medical Association, which for several years has been weighing this problem and endeavoring to bring about an understanding between the faculties of the medical schools and the state medical examining and licensing boards.

Heretofore the principal obstacle to the restriction of instruction was due, on the one hand, to the fact that "teachers in materia-medica subjects in the medical schools felt that it was necessary to impart a smat-

tering of information in regard to a large number of drugs and their preparations, because members of state medical examining and licensing boards were likely to ask questions regarding them," while, on the other hand, members of the examining boards "thought it desirable to ask questions regarding the many thousands of official and nonofficial drugs and preparations because teachers in materia-medica subjects referred to them in their lectures and discussed them in their textbooks."

Such a lack of understanding between teachers and examiners naturally led to an impassé, which, it appears, has been dissipated at last through the efforts of the subcommittee of the Council, of which Mr. Wilbert is a member. This subcommittee has prepared a list of "useful drugs," upon which, it is assumed, instruction in our medical schools hereafter will be concentrated. This list "includes 450 titles, of which 231 may be classed as drugs and chemicals, 173 as preparations, 43 as definitions of forms of drugs, and 13 as cross references." Physicians taking state-board examinations, it is expected, will be examined only upon the drugs and preparations included in this list.

The effect of this restriction, it is hoped, will be more thorough instruction in materia medica in our colleges, since it will be possible to concentrate upon a comparatively small number of drugs. No doubt a student can be thoroughly grounded in the properties and uses of a few remedial agents, at least, as a result of this narrowing down of the course of instruction.

We are in sympathy with this movement. One great defect in our medical schools at the present time is, the superficial character of the instruction in materia-medica. The average student gets only a mere smattering of knowledge of even the most common drugs. Many schools provide no practical clinical instruction whatever in therapeutics, except what is furnished as an adjunct to the chair on practice. Good laboratory-courses in pharmacology are provided by many institutions; but, unfortunately, such instruction, being given, as a rule, by men with little experience in practice, is nihilistic in its tendencies and discouraging in its outlook. Instead of intensifying the faith of our young men in the remedial agents which they must use, there is placed before their mind's eye a striking picture of the ineffectiveness of therapeusis in general and of drugs in particular. Any change promising to arouse the interest of our medical students in drugs and teach them how to use the tools of their trade more intelligently is to be welcomed.

It is to be hoped, however, that this movement is not part of a general propaganda designed to restrict the number of drugs that the physician shall "ethically" use. We want no narrowing down; rather, we want a broadening out of our materia-medica. Just because a drug is an old one, and has been in use for centuries, is not evidence that it is of any particular value; but neither should the fact that a drug is new prevent its being studied and used and advocated whenever it gives promise of doing things that other drugs heretofore have not accomplished. It is entirely proper to teach medical students to understand a few drugs, and understand them thoroughly—that's good work; it is logical, it is right—but physicians who are out on the firing line should constantly be seeking to improve their methods of treating disease. When they are handling conditions that do not respond to the usual methods of treatment, and somebody or something comes along which promises cure, that is the thing which should be used, providing it does not endanger the life or the health of the patient.

We firmly believe that the day is coming when, as a result of this broadening-out process and this intensification of interest in our materia-medica, the alkaloids—the active principles—will come into their own and be honored as they never were before. Active-principle therapy is right; it is scientifically sound and practically effective, and all it needs for general adoption is, the interest, sympathy, and support of the men of our colleges, many of whom are big and broad, and all of whom should be sincere, earnest students of drugs and actual observers of disease.

DOCTOR ROBINSON'S ARTICLES ON THE PROSTATE GLAND

In a brief editorial notice appearing in our August issue, we announced a series of articles on the prostate gland to be, contributed by Dr. William J. Robinson, of New York City. We have now been informed by Doctor Robinson that he will be prepared to begin these articles with our issue of January next.

This series promises to be exceedingly interesting and, above all, practical. Bring this announcement to the attention of your medical friends. This is only one of the many good things that have been planned for 1916.

Proper announcement will follow later.

Leading Articles

Urinary Analysis in the Treatment of Nephritis*

By B. G. R. Williams, M. D., Paris, Illinois

EDITORIAL NOTE.—It is not often that we reprint in "Clinical Medicine" articles originally published elsewhere. We do so, in this instance, because we believe Doctor Williams' paper on Nephritis of the greatest interest and importance to every general practitioner, and are anxious, therefore, that our subscribers read it.

"The master key to the door of Hope
May be held by you or me,
But pray what use is this master key
If withheld by you or me?"

SINCE man has ministered to man in his bodily affiictions, just that long has man studied these afflictions from as many points of view as could be devised, well knowing that only with perfect understanding comes perfect service.

I am not to blame for the subject upon which I have prepared myself. Your program committee merely notified me that I had been put down for this title, and I suppose that I am expected to give a good account of myself. The subject is a unique one, and one which I trust will not prove an altogether unfortunate selection.

You will realize in the first place that it does not permit me to copy a paper from the journals and text-books, but forces me to theorize here and there and finally relate to you my observations.

We must assume that Bright's disease has been diagnosed in our patient, either by symptomatology or laboratory methods, and that we are ready to plan our treatment. In what way will the uranalysis aid us to save his life, or make him as comfortable as possible until he succumbs?

Or will the uranalysis, in fact, provide any therapeutic indications whatsoever?

A study contrast may be wise before investigating the therapeutic indications; and it may be well for us to roughly classify the various methods of treating nephritis:

In class one, we must place the much to be desired specifics. Various specifics for nephritis have been suggested, some based upon empirical and others upon rational grounds. It is a safe guess that hundreds of "sure cures" have been proposed, tried out and abandoned, and about the only ones remaining are those which are advertised in the newspapers.

In the second class come the symptomatics. Far be it from me to overlook the value of the symptomatics. We must not forget to treat the dyspnea, psychoses, cardiac complications, hemorrhages, diarrhea, nausea, headache, edemas, etc., as well as the unusual concomitants of diseased kidney.

Into a third great class fall the very important dietetic measures. These are based in turn upon indications suggested in part by either or both the symptoms and laboratory finds. Unfortunately, in the past they have been somewhat empirical, but there is a tendency to drift toward rational views. Nowadays we do not deny to the nephritic many of those foods upon which we formerly frowned, while others to which we tied our therapeutic hopes have shown some serious shortcomings.

Without further ado let us proceed to the great fourth class of indications—those suggested by the uranalysis:

Amount

The total 24-hour quantity of urine is of great diagnostic importance, but it is doubtful if we are justified in treating the polyuria of chronic interstitial nephritis. It is probable that the patient will be actually harmed by any measures aimed to reduce the total quantity. In the oliguric nephritides it may be advisable to increase the quantity of urine. In the selection of diuretics it may be well to warn ourselves that those which attempt to whip the renal cells into increased exertion, should be avoided. Thus, from a theoretical standpoint at least, caffeine, theobromine,

*Read by invitation before the Clark County Medical Society, June 10, 1915. Reprinted from *The Illinois Medical Journal*, September, 1915.

diuretin and other renal diuretics should be avoided, and we should fall back upon water prescriptions or the cardiac diuretics, as digitalis, strophanthus, etc. It seems to me that a severe oliguria must be considered quite as death-dealing as cardiac insufficiency or any other severe aspect in the clinical history. When day after day the amount of urine rarely exceeds one pint, it is evident that not enough water is present to hold in solution and carry away the necessary urinary solids. We speak of the serious outlook in those cases where there is urea or chloride retention, but give very little attention to what is perhaps the chief cause. I shall have something to say upon acid retention or fixation in the renal cell. If I should place a drop of sulphuric acid upon the skin of my arm and permit it to remain six hours, there would result a severe injury. But if I place the same drop upon my arm and add to it a single drop of water, the injury will be much less; and if I repeatedly add water the injury will be slight indeed.

I have referred to water prescribing. It is not sufficient to tell the patient to drink plenty of water. It is much better to prescribe it in sufficient dosage to be taken at regular intervals. I will have occasion to refer to this a bit later when speaking of Fischer's alkaline treatment.

Even as polyuria is perhaps not to be treated, and even as oliguria should be treated, so anuria, a complication of frequent occurrence, *must be treated.*

Anuria, or complete absence of urine for several days, is always a condition of considerable importance, notwithstanding the many contradictory statements in texts. That anuria without uremia may persist for a considerable period, I will not gainsay, but how unexpectedly convulsions and fatal coma may suddenly appear, has been realized by all of us. The kidney has for its purpose the secretion of urine; let this purpose be thwarted, and the condition may at any time quickly pass beyond the action of remedial measures.

Let me repeat: anuria is always a serious occurrence. Even though the patient laughs at your painstaking; even though the texts tell you that Doctor So-And-So reported a case where the patient recovered after a two weeks' anuria, do not fail to resort to the use of hot packs, pilocarpine and elaterin.

It has been said that anuria cannot be held responsible for the symptoms of uremia. Common sense shows the stupidity of such a claim. Of the nature of uremia, we know very little, but clinical experience convinces us that it must be very closely associated with anuria. Do not underrate anuria.

The color, odor and general appearance of the urinary specimen may mean much to the diagnosis of nephritis, but there is no logical reason for their therapeutic correction.

The specific gravity is of some importance in connection with the total quantity of urine. In other words, the total solids are of some importance, especially a marked reduction. But I would say in general that quantitative studies of the urea, chlorides, and so on, are likely to give more definite and usable information, so that we shall pass on hastily.

The Reaction

The reaction of the urine in nephritis is rarely normal. That is, we rarely find a slight acidity due to acid salts, but either an intense acidity or a marked fixed alkalinity which persists from day to day. These findings have confused us in the past, but since the wonderful studies of Fischer, we have come to understand them. All nephritides are acid in origin. These acids are variously derived, some from proteids in the process of decomposition. Thus, either from proteid foodstuffs in the colon or from body proteids in local suppurative processes, our contribution may come. These acids are of organic derivation and are essentially poisonous. Their presence in the urine gives it its high acidity. In the process of passing through the renal parenchyma the kidney cells are injured, but retain the acids in part. At some stage in every nephritis, they refuse to further excrete the acids and either retain them in their protoplasm or force the blood to carry them elsewhere. Then the urine becomes alkaline and usually remains alkaline until death. Let us turn our attention to one of the causes of nephritis and show how nephritis may be cured by careful uranalyses undertaken early in the disease.

Among the acidemias that of colonic stasis is most important. We speak of the condition as intestinal acidemia, or copremia. In certain persons, as a result of constipation, excessive ingestion of proteids, enteroptosis or unknown causes, certain bacteria in the colon attack the proteid foodstuffs, breaking them up into organic acids and other decomposition products, and these are absorbed and appear, at least in part, in the urine. We do not know the exact composition of all these acid bodies. Among them have been found carbolic acid, indolacetic acid, acids of the sulphur series, hydrocyanic acid (?), paraoxyphenylacetic acid and paraoxyphenylpropionic acid. Be-

sides these are the true indicans, which I shall consider later. Indicanuria and hyperacid urines have about the same meaning. Both conditions may occur at the same time.

Let us pass by the headaches and other symptoms of copremia with the remark that they are but the initial symptoms of the Bright's to follow, and study the action upon the kidney. In all cases of indicanuria and highly acid urine due to intestinal acidemia, we are very likely to find traces of serum albumin and hyaline casts. This does not mean at this time a hopeless nephritis, but it does signify that the injury to the kidney is consequential and must be checked. In fact, we will observe an attempt upon the part of the tissues to combat the acidemia, but the attempt protects the tissue cells other than those of the kidney. In other words, the ammonia of the urine is increased at the expense of the urea, because the alkaline precursors have united in part with these poisonous acids, that the fixed alkalies of the tissues may be spared, but this does not protect to any extent the protoplasm of the ultimate secreting renal unit. Of course, the total nitrogen is unaltered, but the urea is low, and this low urea must not be taken as an indication of retention—cannot be, in fact, if the other estimations are made and considered.

Before proceeding to a consideration of the other poisonous urinary hyperacidities, let us look into the treatment of copremia, the cause of perhaps seventy-five per cent of all cases of chronic nephritis.

There is an old caution, "Examine the urine in every case of persistent headache."

There is a better caution nowadays, not only better from many other standpoints, but especially for the reason that headache may occur a bit late in nephritis, "Examine every man's urine at least once or twice a year whether or not he complains of symptoms." Of course, this cannot be done in the majority of cases, but it does not lessen the value of the advice, for I am convinced that these forms of nephritis can usually be cured long before symptoms appear.

The man who hopes to treat intestinal acidemia by a course of alkalies alone will occupy a position similar to that of the boy who tried to drink up the water from the leaking dam. The man who hopes to accomplish noteworthy results by the administration of a single cathartic will be but little better off. Both of these methods are not without value, but there are other principles which must be carried out if any degree of success is expected. Only a week or so ago, I heard Fischer's alkaline treatment condemned by a local physician in no uncertain language, but he had depended upon a neutralization of consequences rather than attack upon causes for his success, a principle which clings as closely to the mind of the average practitioner as did the old man of the sea around Sinbad's neck.

Treatment of Copremic Acidemia

As a whole, the treatment of copremic acidemia may be expressed catagorically as follows:

1. Reduction of the proteid diet.
2. Elimination of the focus of the intoxication.
3. Administration of antacids.

Obviously the main problem will lie in eliminating the focus of intoxication. But how?

A preliminary cathartic is necessary, and since we are dealing with the colon, this obviously must be a saline. Then should follow a course of laxative alkaline salines, to insure a strict housecleaning in this natural incubator. This may be coupled with the intelligent use of efficient intestinal antiseptics. We know that these will not murder every erring germ; nevertheless, much may be accomplished in this direction.

Then, after a week or so, we cease giving the antiseptics, but continue the laxatives—we are ready to substitute a well-behaved germ. Yeasts appear to be of some value, but the most efficient policeman of the colon appears to be Metchnikoff's bacillus bulgaricus; and this I do not hesitate to say, judging from my observations in hundreds of cases, will act almost as a specific when backed by proper attention to the other principles of treatment. The urinary reaction will become normal, ammonia will sink and urea rise, indicans will disappear. Albumin will disappear from the urine unless the case has gone too far, casts cannot be found, vertigo, nausea, mental torpor and headache will clear up, the complexion will become better and appetite will be regained. In other words, we have cured a case of nephritis. We have held and used the master key to the door of Hope.

Of antacids there is no lack and they may be carefully used along with the treatment devised to eliminate the focus of intoxication.

Now and then this line of treatment may fail or must be continued indefinitely, excellent though it has proven in the majority of cases. What is the trouble? Examination will reveal that an enteroptosis or other anatomical condition exists favoring stasis; and here

we must call upon the surgeon to help us out. As a rule these cases may be reached by proper dietetic and medicinal measures. I know of one case of so-called neurasthenia in which a trace of albumin and many hyaline casts brought home to the attending physician and myself the fact that this neurasthenia had an organic basis. High acids, high ammonia with normal nitrogen and indican gave us the clew. This victim of enteroptosis was, I sincerely believe, rescued from the grave of a nephritic by the fact that two rapidly succeeding pregnancies, by some means certainly mechanical (as supporting the colon), took care of the condition and the strain was removed from the kidney parenchyma. What this woman now needs is either an operation or another pregnancy.

Why Treatment May Fail

In previous papers I have insisted that an acidemia may exist by virtue of necrotic changes in the tissues themselves. The findings in the urine are similar to those detailed above. Indicans are less frequently found. The breaking up of the body fats may add the fatty acids, those poisons recently shown by Tallquist and Vetlessen to be essentially hemolytic in nature (explaining, perhaps, the severe anemia associated with some of the nephritides); still the picture of high acids, constant nitrogen and ammonia overbalancing the urea is not unlike that noted in the copremic acidemias. The blood examination will reveal an iodophilia and set us searching for the focus in a necrotic tumor, localized pus, tuberculous exudate, and the like (lardaceous kidney), in all cases there being truly an excretion of poisonous proteid-decomposition-products via the urine.

All of which will explain why proper attention to the colon does not always clear up an acidemia. Now, it has been known for many years that hidden suppurative processes, though of a low grade, may lead to nephritis, and though the theory has been popularized by Billings and others, no special credit is due these men, but it is rather to our discredit that we once learned and again unlearned the lesson. Perhaps the theory was carried too far at the time. At any rate our attention is again directed to the nasal sinuses, tonsils, teeth, lymph glands, lungs, gall-bladder, appendix and so on in our search for the factory where the poisonous acids are made. I have seen instances where the removal of a decaying tooth was followed not only by beneficial results as noted by the appearance of the patient, but a vicious-appearing urine promptly became normal. If the focus cannot be found, we should at least use neutralizing antacids to spare the kidney parenchyma as much as possible.

Serum Albumin

We have seen above that a trace of albumin may be loosed into the urine when the renal cells are forced to excrete poisonous bodies. This brings us to the entire question of albuminuria and its significance.

When a slight heat and nitric-acid precipitate cannot be explained by nucleoproteids, Bence-Jones body, calcium sulphate, and the like, or when such coagulum is marked or persistent or both, we are dealing with true serum albumin, a finding which is never physiological.

Serum albumin may be derived in part from the blood, escaping through the glomerulus by virtue of general or local alterations in blood pressure, injury either to the endothelium or secreting epithelium, or occur from unknown reasons. It may be derived from the kidney cells by virtue of retrograde changes.

The albuminurias have been variously classified. The only class with which we are concerned is the "renal albuminuria." To prove a true renal albuminuria, several rules must be kept in mind, to-wit:

1. The albumin must be serum albumin.
2. The albuminuria must be persistent or nearly so.
3. The other serum albuminurias must be ruled out.
4. The presence of cylinder casts, cells from the uriniferous tubules, and so on, argue for true renal albuminuria.

How shall we treat renal albuminuria?

We have touched upon the logical treatment of the incipient cases, and there is no better treatment for the more progressive cases of albuminuria. *Clean up the focus of poison manufacture.*

We must do more in the more progressive cases of albuminuria, and a few principles are here suggested.

All of this serum albumin does not come from the kidney, but much of it from the blood; and it is probable that the patient does not have this albumin to spare. It is in just such cases that lecithin and nuclein, administered for prolonged periods, prove peculiarly efficacious. In acceptable form they provide exactly the reconstructive material demanded by the discouraged cells, and the remote metabolic wrong being corrected, the drain ceases.

There is abundance of clinical proof that an active preparation of cactus grandiflorus,

through its influence upon the heart and circulation, materially improves nutrition and reduces the output of albumin. Many well informed and observant therapeutists prefer cactus to any other preparation, as digitalis, in such cases.

It may then be advantageous to treat the albuminuria by aiming our efforts at the blood pressure; investigate the heart and arteries, and give digitalin (or cactus) or glonoin, with elaterin or milder laxative as indicated, and the albumin of circulatory origin will be held back except in so far as released by diseased kidney tissue. I know of no way to prevent the excape of circulating albumin when the renal substance is already destroyed; we certainly cannot hope to check it by attention solely to the heart and arteries.

Can we decrease the serum albumin resulting from cloudy swelling of renal cells and the ultimate plasmolysis consequent upon it? I think that we can; in fact, Fischer apparently proves that this process is directly due (except, perhaps, in mercurial nephritis, and the like), to a storing up of acids in these cells and injury to the protoplasm. Thus the indications (other than the prevention of acid elaboration where possible) are clear for dilution and alkalinization. In other words, we must prescribe water and alkalies freely if we hope to decrease the albumin from this source. This will explain why alkaline remedies, given with copious drafts of water, often produce such marked benefit in the earlier stages of nephritis.

Remedies of Special Value

But as yet we are clutching only at the fringes of knowledge. We know something concerning nephritis, but some particulars of the pathology are not yet clear. And how may we successfully treat a disease until we know its pathology? We have shown that the measures aimed at avoiding acid fermentation and neutralizing those acids or else diluting those already formed comprise the rational treatment of albuminuria. But we are justified, in the absence of complete pathological knowledge, in turning to certain remedies now regarded as empirical, but which tomorrow, when our research workers have cleared up this baffling field, stand best chance of a place in our rational list. Of these special mention is to be made of the active principle of the bear berry—a grain an hour at first, and, when the albumin drops lower in daily excretion, to give a grain every four hours thereafter. Now I can say very candidly that I have never seen any one remedy clear the urine of albumin in so many cases as does the bear berry, and I have seen it tried upon a large number of cases, usually in connection with the fight upon the acids.

A couple of months ago I saw two cases of nephritis secondary to influenza in which the bear berry was not satisfactory. The physician claimed excellent results in some of these cases with an active iron. We did not secure the proper preparation at the time, but used instead a proprietary preparation of iron with excellent results. After giving the iron, the bear berry completed the clearing of the urine.

Epsom salt is advised upon empirical grounds, not by mouth, but as follows: A tub is filled with hot water previously saturated with epsom salt. The patient sponges quickly so that the salt solution comes into contact with every particle of the skin. Immediately he deserts the water and rubs or is rubbed briskly with a rough towel. This treatment is not applicable to the more serious cases because of the exercise.

In a Nutshell

Let me hastily review the treatment of albuminuria as such:

1. Prevent, if possible, acid formation.
2. Dilute and neutralize all acids the formation of which cannot be prevented.
3. Keep the blood pressure and heart action as perfect as possible.
4. Bear berry and active iron are, in my experience and observation, most excellent empirical remedies.
5. The epsom bath is good in some cases.

This is all I shall have to say concerning the treatment of renal albuminuria as such. Not enough, perhaps, but my observation is that one line of treatment persistently followed often accomplishes much more than a "running hither and thither." I have seen tuberculous infection conquered by a monotonous routine of months; I have seen leukemia held in check and apparently cured by pushing one drug for a year. I have seen a man with pernicious anemia poisoned with arsenic which incidentally added years to his life. I have seen whooping-cough, the disease of a thousand remedies, cut down to a week or so, from discouraged Osler's six weeks—"and by a bottle of something better than paregoric."

The text-book tells us to try a little of this for a short time, and if we do not succeed we might try a little of something else. Now, I do not treat patients, but I have seen several cases of albuminuria treated, and my advice is: give each remedy a fair trial. Albuminu-

ria does not appear in a day, nor can it be cured as quickly as that. The methods suggested in this paper are not claimed to be the best. You may know of a much better way of treating renal albuminuria, but do not be discouraged if spectacular results are not witnessed within a few days—aye, a few weeks.

A Few Words as to the Diet

I cannot well undertake the dietetic consideration of the various nephritides as suggested by other laboratory findings, by symptoms and by signs, but rather from the standpoint of albuminuria. What effect, if any, does diet have upon the albuminuria? You will see that I have accounted in part for the albuminuria by cell death, but in part from the blood, and I may get into pretty deep water if my treatment does not cover other causes.

I am told that excessive ingestion of proteids may increase the serum albumin in the urine, and observation in special cases would lead me to suspect that this is true.

What of it? Must we in consequence withhold proteids from our patient when he needs them to take the place of those albuminous bodies passing away in his urine? This would be extreme. Precipitin tests may show dietetic albumin in the urine, but precipitin tests do not give percentages. In fact, dietetic albumin may be present in amounts of 1 percent, serum albumin from blood and renal cells up to 99 percent. No, we have not yet proven that a renal albuminuria is an alimentary albuminuria.

Scalia has shown that when egg albumin is injected subcutaneously there may be an induced albuminuria in nephritics. But Scalia has proven nothing pertinent to the great question. Upon a mixed diet including eggs, no reliable research worker has conclusively shown that the urine of a nephritic shows egg albumin in appreciable quantities. Krasnogorski has shown that the albuminurias of infancy contain no specific groups characteristic of the dietetic proteids, but that the bodies are derived entirely from the tissue albumins.

In chronic albuminuria the indications are somewhat different from acute nephritis. In the latter the fight is short and dietetic measures may be rigid. But how may we expect to lengthen the lives of our chronic nephritics by starvation? I have seen these patients, taught by some quack or some short-sighted physician, test their own urine for albumin day after day, cut down their own miserable existence or make life almost unbearable for their friends. Quantitative albumin estimations are of some diagnostic worth, but of little prognostic value.

A mixed diet is necessary for the nephritic, and this diet must contain certain proteids—milk, eggs and even meats (especially the white meats). An absolute milk diet may be advisable in acute nephritis, but never in chronic nephritis, in that it is too rich in albumins.

Albuminuria may better be treated from a dietetic standpoint, not by eliminating proteids, but by doing away with kidney poisons—alcohol, red meats (kreatinin), and condiments, especially sodium chloride, of which I will speak later.

Some Other Albumins

I have given so much time to the indications supplied by albuminuria of the serum type, I must hasten over the other albumins without comment.

Urobilinogen is important, inasmuch as it suggests a very useful therapeutic test in the complicated cardiac-hepatic nephritides where we are not certain of therapeutic indications and which is the primary condition. I cannot otherwise go into the question of the significance of urobilinogen, a pigment which means much in the liver diagnoses. Under digitalis treatment the disappearance of albumin and urobilinogen points to primary heart disease, the disappearance of urobilinogen alone to hepatic disease and the disappearance of albumin alone to primary renal disease. I am very sorry that I have not the time to enter fully into urobilinogenuria.

Bilirubin

When bilirubin appears in the urine of nephritis, the outlook is serious, for bilirubin is more poisonous to the renal cell than is an organic acid. The toxic desquamation of pigmented cells furnishes the proof. The treatment, of course, depends upon the cause of the bilirubinuria and cannot be considered here. Undoubtedly many cases of chronic parenchymatous nephritis are directly due to prolonged or severe bilirubinemia.

Carbolic acid, indican, indolacetic acid, and the like, have been considered under the subject of acidity.

Chlorides

A high sodium chloride content in the urine of any nephritic suggests reduction, for we know that retention, either in part or entirely, is more likely to occur; and that this salt retention favors edema, dyspnea and other complications. At a certain point in almost every case of nephritis, the kidney cells excrete

weakly or not at all the superfluous salt. Knowing now as we do of the law of salt equilibrium, we do not hesitate to exclude as nearly as possible all salt in these late cases. The salt is excluded at the dining table. It is excluded in the kitchen. We have even gone further and selected foods of a low salt content, especially milk, though we must keep in mind the caution concerning milk mentioned above. So, rather than suggest any one perfect salt-poor article of diet, we usually advise a diet mainly of milk and milk products, chicken, eggs and vegetables, avoiding especially other meats.

Phosphates

The irritating action of phosphates in large quantities upon a diseased parenchyma has been pointed out by von Noorden and others. It is impossible, where true or clinical phosphaturia complicates nephritis, to expect much from diet, inasmuch as phosphoric acid is so well distributed in our foods. But von Noorden has shown that calcium carbonate added to the diet precipitates the phosphates as insoluble compounds, and they pass through the intestinal tract unabsorbed and consequently the renal cell is spared the duty of eliminating them.

Urea

A low 24-hour excretion of urea is taken as evidence of renal retention of that salt. It is not stored in the renal cells so far as has been demonstrated, but is kept in the blood and excreted by the other emunctories. Thus it may be demonstrated in the perspiration, and perhaps in the feces (?). The indication is in part, therefore, to call upon these for extra work in case of urea retention. We know of no means by which it may be increased in the urine late in nephritis, urea being of itself the most perfect diuretic. It is advisable, of course, to reduce the proteid diet to just what is necessary, not because urea is poisonous, but closely related bodies may be very toxic. We must not forget that low urea in every case of nephritis may be explained in part by the acidemia, the ammonia being used in part to neutralize acids or acid action and that low urea is in part explained by failure of elaboration. But we know that urea retention does occur, or else urea would be excreted by the proper route instead of by the skin, lungs, and the like.

Cylindroids

Nephritis is not diagnosticated by the finding of cylindroids. Without any attempt at definition and differentiation, I will say that the cylindroid does furnish a therapeutic indication in nephritis. The false cast means a sluggish flow of urine through the tortuous secreting kidney tubule. But it is interesting to know that down through the animal and vegetable kingdoms, one of the laws of health is prompt removal of products of excretion. It may be true that even at Bowman's capsule there was a water paucity and a solids overplus; cells down the line may be reabsorbing the watery portions—upon all of these points we cannot definitely commit ourselves, but nevertheless we have to face the fact that the flow has been retarded sufficiently for a mucus cast of that uriniferous tubule to be formed. The treatment is that apparently of hastening the flow through the kidney, and dilution. Consequently water prescribing or even the use of mild diurectics may be indicated.

Casts

The treatment of the cast matrix is essentially the treatment for renal albuminuria, it being fairly certain that hyaline is very closely related to serum albumin. It is not in all cases an excreted albumin, but often the remains of a microscopic extravasation into a uriniferous tubule.

Granules and cells are extraneous to the cast pathology and their attachment or inclusion accidental. Therefore, the treatment differs. Cells and granules represent desquamation and retrograde changes respectively and the indications are those suggested by finding the renal cells in the urine.

Kidney Epithelium

I have been hurrying over the indications somewhat more rapidly than their importance justifies and I ask you to let me go more fully into the meaning of the kidney cell, the most important of all finds. Kidney cells occurring in the urine in considerable numbers or persistently, are a matter of deep concern to the therapeutist. The pathologist tells us that the cell from the uriniferous tubule when lost is not regenerated, and that its neighbors must take upon themselves the work of the lost one or else this work be left undone. Whether the poison be bacterial, bilirubin or acids, it may slay the renal cell and it floats away into the urine forever. Other cells, as in the shower of contracting kidney, are mechanically dislodged.

But the toxic desquamation is the more common type and death is brought to the ultimate secreting unit merely because it retains the poison, being unable to pass it on. These renal cells of ours have hard tasks set

before them in their span of three score years and ten, but after all a cell is a living mass of protoplasm, and no matter how great the specialization, all living matter may be killed. Of all factors, poisonous organic acids are chief, no matter where these acids may be formed—we know very well the focus in most cases. Just as there result cloudy swelling, coagulation necrosis and granular disintegration, so do these acids often pick upon the cement substance first of all, dissolving it, so that the cells are no longer bound to the membrana propria, but slip into the current and are lost forever. And the finding of protoplasmic granules, nuclear remnants, granules in casts, tiny fat droplets or renal cells, all have the same significance.

I have spoken of the focus and the desirability of its elimination, even though too late to repair the damage to an extent sufficient for a return to health. But nothing should be omitted which promises hope of prolonging life or making more comfortable the remaining days of the unfortunate.

It may not be the fault of the family physician, but rather the ignorance and carelessness of the *patient*, that he is dying of Bright's.

Although merely a neutralizing treatment, we must not forget the alkalies. In acid retention, as indicated by the uranalysis, I can do no better than to repeat the recommendations of Fischer:

"Acid intoxication is itself proportional to the concentration of the acid; and this must be kept as low as possible. This can be done by giving water. The administration should be regular. The night administration of water is as important as that throughout the day, for the production of toxin does not stop with nightfall. If the water contains an alkali of some sort so much the better. If the patient will tolerate it, one-half to one gram of sodium carbonate may be added to each glass of such alkaline or plain water."

Nephritis may be cured. It may be cured, explains the physician, if patients would present themselves for a diagnosis before it is too late. But we have learned from our research workers that abnormal urinary states with indefinite symptomatology precede the typical and hopeless symptomatology by many months. As a matter of fact, these patients *do* present themselves for treatment in the curative stage in a very great number of instances; and I hesitate not to place the responsibility upon the shoulders of the physician rather than the patient. While we treat our patients for headache, indigestion, insomnia, neuralgia, and the many indefinite symptoms, the kidneys are being slowly eroded away by a urine in which can be demonstrated with ease poisonous organic acids, high ammonia, falling urea, the indicans and the first evidences of retrograde changes —the faintest trace of serum albumin and occasional renal cell or hyaline cast—all these at a time when proper remedial measures would not be in vain.

And when the typical edemas, dyspneas and psychoses appear, it is too late for correction.

Do not forget the urine when diagnosing: do not forget the urine when treating.

Do not forget the uranalysis in nephritis. Do not forget the uranalysis in any of the minor disorders which may be but warnings of the hopeless Bright's to follow.

In 1857, Barclay made the following remarks:

"When inquiring with some minuteness into the changes which urine undergoes, we will find that in very many instances its abnormal states are dependent on disease of distant organs, by which the function of the kidney is merely interfered with." The proposition is not a new one.

And it is for the correction of these abnormal states I make my plea, for in their correction lies our sole hope of curing nephritis.

The Treatment of Sick-Headache

By Beverley Robinson, M. D., New York City

EDITORIAL NOTE.—Doctor Robinson is one of our master clinicians—a man from whom we can all learn much. We take great pleasure in presenting his fine article on "Sick-Headache" to our readers.

TO ME, as to very many practitioners, the treatment of migraine, or sick-headache, has been unsatisfactory. Very many remedies have been tried, and at times one or the other has seemed successful for a while. In the end, however, we still have this very painful and disabling affection confronting us, and the patient still seeking relief or else almost disheartened and unwilling to go on trying new remedies. I have had patients who did almost everything, in the hope of getting cured. Eyes have been examined and treated for errors of refraction or weakness of accommodation. The displaced uterus has been put in order with pessaries. Operations have been performed upon the womb, such as that for retroversion, or mending a torn cervix. The stomach-specialist has tried his hand with washing the viscus, examination of the gastric contents, administration of bismuth magmas, and maybe radiographs. The osteopath has had his day, as has also, finally, the ultrabeliever in spa-treatment.

In a pronounced case of sick-headache with auras (especially visual), when there is a throbbing, splitting headache, accompanied or followed by nausea or vomiting, these attacks returning periodically at more or less regular intervals, and not infrequently without any assignable rational cause, everything fails to prevent the return of the attacks, the victims suffering during many successive years, sometimes almost their whole life. It is true that in the case of some women—and also men—toward middle life these paroxysms of pain become less frequent and milder, and then the treatment last employed (if there was any) gets the credit for the amelioration or, if so it be, the cure.

The Various Types

The following are some of the varieties of migraine I have met with, apart from those to which I already have referred.

First, there is the married woman who has had several children and has been bothered by household cares, besides a husband who is not always appreciative of the wearing conditions burdening his wife. These wives are of two kinds. The one is quick, energetic, of spare build and clever of mind. In her case, errors of diet, except perhaps in moderate degree, do not exist. As a rule, she does not overeat or delight in rich dishes; she does not drink strong tea or coffee or take wine at meals. Usually she will not, or can not, stop her daily work until she is obliged to do so. The first thing she does, when compelled, is, to go to bed in a darkened room and try to be as free as possible from noise or interruptions. She does not want food, and does not take it unless forced to. A little cologne-water, bay-rum, vinegar or spirit of camphor is used to bathe her temples; occasionally a modified mustard-leaf or a hot-water-bottle is put on the back of her neck for a short time. Now, all this is very well, but it should be supplemented by her taking an effervescent mixture of bromide of sodium and caffeine, in fairly large dose (20 grains of the former and 1 or 2 grains of the latter), to be repeated twice. The proprietary bromocaffeine I often have found, in an emergency, very useful in diminishing the pain of the paroxysm and also, perhaps, its duration. Gentle massage of the scalp, temples, and forehead may be helpful, if done with skill by one who knows how.

Not only in these cases is local massage treatment of service during the attack—particularly when the sharpest pain has subsided—but it is curative, as I know, when nodular thickening, and resulting pressure, of some of the superficial nerves of the 5th pair involved exists.

Next, there is the type of married woman, with husband, children and home, who is somewhat obese, indisposed to physical exertion, freely indulgent of sweets, sauces, and tea and coffee. In her case, the medical treatment for her recurrent sick-headaches should, first of all, be directed toward the stomach. Frequent doses of milk of magnesia, bismuth, mixture of rhubarb and soda, will tend greatly to quiet things. At times, however, merely an attack of vomiting, very painful though it be, will give some relief, which a subsequent good sleep may complete.

Some Expedients Giving Relief

In the two classes of patients here described, the face may be pallid, the pulse slow, and the arteries indicating spasm and a

small supply of blood to the brain. Here, a nitrite of amyl pearl (3 minims) broken in a handkerchief and inhaled may break up the arterial spasm rapidly and bring relief, although at first, for a few moments, the pain in the head will be increased.

When different expedients have failed, and the attack is one of great severity, nothing will give the relief that can be obtained from a hypodermic injection of morphine and atropine, beginning with 1-8 grain of morphine and 1-150 grain of atropine. There is no use giving it by the mouth, as the dose invariably upsets the stomach and does not ameliorate the distress. Of course, no one realizes more than do I all that has been said against the morphine-habit and the unpleasant after-effects of that narcotic. On the other hand, it certainly affords relief in some instances when nothing else will, unless it be a few preliminary whiffs of chloroform.

The best and least objectionable salt of morphine I have found to be the bimeconate; it is better than the customary sulphate. Being rarely used, however, it may be somewhat difficult to obtain in places. This salt was made known to me, years ago, by the late Dr. Charles Carroll Lee, of New York, and he had been told of it by his senior partner, the late Dr. George T. Elliot. Both these men were very distinguished practitioners. The use of morphine and atropine in migraine was upheld also by the late Doctor Jewell, of Chicago. His article on the treatment of headaches, in *The Journal of Nervous and Mental Diseases*, of 1881, is one of the best and most practical I know of.

Headache in the Plethoric

Another kind of victim of sick-headache is the full-blooded, somewhat plethoric man, who eats abundantly and too much meat food. As a rule, he does not take much exercise and his brain-work is insufficient. The essential thing for him, in addition to rest and quiet, is free evacuation from his bowels. The best means to this end is a pill-mass composed of blue mass, grs. 3; compound extract of calacynth, grs. 5; extract of henbane, grs. 2; and made into two pills or capsules. A hot mustard-footbath also will afford relief. Furthermore, a little bloodletting from the arm or leeches to the mastoid region would be sovereign, if it were permissible nowadays. In these cases, morphine should not be given, if it can be avoided. The application of menthol and cologne-water, or a mixture of menthol, salicylate of methyl, and camphor, to the temple, behind the ear or to the back of the neck may be tried. Also, a mixture of phenacetin, caffeine, and salicylate of ammonium may be given, in a capsule. Unfortunately, the stomach may reject this. In that case, a handkerchief tied tightly around the forehead and an ice-bag applied to the head possibly may bring relief. In extreme cases, even here morphine and atropine, in small doses hypodermically administered, is our last and best reliance.

Means to Prevent Recurrences

How shall we ward off the repetition of these attacks or lessen their frequency and severity as much as possible? Evidently, all great strains of the nervous system should be avoided. Overwork mentally, anxiety, exposure, too much physical exercise, all will help to precipitate an attack. The monthly periods in women should be regulated, and at these times women must keep quiet and rest as much as they can.

The stomach, however, sooner or later is the great immediate offender in many instances, and for this reason there must be insistence upon a simple, moderate diet. No sauces, rich dishes, sweets, strong tea or coffee, or alcohol should be allowed, for a time, in any event, and until a habit is broken up and the patient may be able to recognize the good effects of abstemiousness and care. No doubt, in obstinate cases, a course at a spa (such as one might get at Carlsbad, Hamburg, Wiesbaden, Vichy), when properly applied, at times works wonders. In the case of some of these patients, such treatment may secure comfort for many months. A spa-treatment may not, however, do better than the sojourn at a peaceful, quiet summer-resort, where life in the open air and early hours, with plenty of sleep, are adhered to.

The use of electricity in any form, the prolonged taking of cannabis, the ordinary tonics of quinine, iron, and strychnine occasionally are useful to anemic women. For the fullblooded man or woman having the costive habit and a congested liver, I have found phosphoric acid and taraxacum, with a very little nux vomica added, preferable.

This contribution might readily be lengthened, but even as it is I trust it may be suggestive and helpful to the practitioner who has not yet grown old in harness.

In conclusion, I would urge the great importance of not laying down too many rigid rules about diet and regimen. The human animal is various, and difficult to understand clearly both in his physical and mental make-

up. A wise, judicious empiricism frequently is more valuable and lasting than any newer knowledge that proceeds solely from the laboratory or the hospital-ward. In many ailments, one learns the practice of medicine by repeated trials of different agents, with or without a well-thoughtout theory to back them up. When theory does not conform to results of experience, I, for one, insist that theory should give way and take a back seat.

A Form of Heart Disease

Due to Disease of the Gall-Bladder

By Bayard Holmes, B. S., M. D., Chicago, Illinois

THE heart is subject to at least three forms of disease: (1) The interior mechanism of the organ becomes disturbed, and the valves fail to meet and close exactly. This is valvular disease. (2) The nervous mechanism of the heart is disturbed, so that the timing of the auricular and the ventricular contractions is not synchronic. This is the condition which the electrocardiograph now is so wonderfully demonstrating and interpreting. (3) When the heart-muscle is intoxicated, or poisoned, we have the third form of heart disease. Here, the valves may be perfect and the nervous mechanism undisturbed, and, yet, the patient be on the road to die because of a diseased heart; namely, myocarditis. In some degree, inflammation of the cardiac muscle occurs in every general toxemia if sufficiently prolonged, but it shows a remarkable tendency to appear (which often happens quite suddenly) in the course of chronic gall-bladder disease, or cholecystitis. Probably more than one-third of civilized men and women some time during their lives have more or less mild or severe attacks of inflammation of the gall-bladder.

The bile that is secreted from the liver-cells passes through the bile-ducts downward toward the intestine. These bile-ducts are lined on every side with mucous glands, and these mucous glands add their secretion to the bile, producing a colloid mixture of thick consistence, and this pours into the duodenum during the process of digestion, while backing up into the gall-bladder during the intervals when the stomach and duodenum are quiescent. Further, the gall-bladder itself has a lining of mucous membrane, and in the healthy person is provided with fifteen or twenty mucous glands situated close to the cystic duct.

Myth of the Disinfecting Power of the Bile

There has been a tradition in medicine that the bile was so strongly antiseptic and germicidal in its action that microorganisms could not grow in it. More recent experiments show that this is not so. Nearly every pathogenic microorganism, from the typhoid bacillus to the streptococcus and pneumococcus, will grow in the healthy bile.

In the course of infectious diseases in which any microorganisms are to be found in the blood, the same organism may be found in the secretions of the liver. The bile contains the typhoid bacillus during an attack of typhoid fever, it contains the pneumococcus in the course of pneumonia, and it contains the streptococcus of puerperal fever during that condition.

Whenever the bile contains a microorganism that has been extruded from the blood into the liver, the same organism can be found in the gall-bladder. The tide of bile which pours into and out of the gall-bladder generally carries away the multiplying harmful organisms of the bile, and so, in the course of a few weeks or a few months after an attack of pneumonia or typhoid fever, the gall-bladder is completely free from those germs by this fractional method of sterilization. However, it occasionally happens, either through some defect of the valves of Heister, that guard the outlet of the gall-bladder, or through some infection of one or more of the mucous glands at the mouth of the gall-bladder, that this fractional sterilization does not fully succeed, so that the gall-bladder, for a long time or for the rest of life, will continue to harbor the organism causing the primary disease. It is in this way that the typhoid-carriers (so exploited by the newspapers) eventuate. These persons had recovered some time in the past, of typhoid fever, their attacks having been of the ambulatory type.

Cholecystitis and Cholelithiasis

During the time that the gall-bladder is infected and replete with the growing pathogenic microorganisms, the mucous membrane, which ordinarily is very thin and almost entirely devoid of secreting glands,

becomes greatly thickened and its whole interior becomes lined with adventitious mucous glands, every one secreting a large amount of colloid mucus containing infinitesimal globules of highly polarizing cholesterin. This material frequently crystallizes about a clump of agglutinated microbes. The crystallization goes on week by week, month by month, and year by year, and in this way produces the gallstones, which latter are, erroneously, looked upon as the disturbing element, instead of as the product, of the disturbance of the gall-bladder.

Gallstone-disease, or cholelithiasis is a terminal condition and is almost unworthy of being distinguished by a nosologic term. Treatment should not be instituted for gallstones, but for the infection which produced them. However, gallstones are not the unvarying result of infection of the gall-bladder; in fact, there is every reason to believe that they are one of the exceptional manifestations of the disease, and their chief interest lies more in the fact that these concretions so positively confirm a diagnosis of cholecystitis.

The time was, not so very long ago, when a diagnosis of gall-bladder disease was made only when the cystic duct had been stopped up by a gallstone and the patient suffered from agonizing biliary colic, chills, fever, and localized tenderness in the hepatic region. Such a diagnosis was analogous to the diagnosis of appendicitis after the outlet of the appendix had been obliterated, the appendix ruptured, and a periappendical abscess formed. The diagnostic skill of the medical profession has advanced to such an extent that conditions of this kind now are rarely seen about the appendix, but many physicians still wait for the colic, the pain, the fever, and even the jaundice before they make a diagnosis of gall-bladder disease.

While cholecystitis is almost a uniform sequel of typhoid fever and other septicemic conditions, we have learned to recognize that infection of the gall-bladder as well as that of the appendix frequently follows an infection of the intestinal tract higher up. Thus, a chronic suppuration in one of the sinuses of the nose or even of the ear is likely to be followed, not alone by gastric ulcer or appendicitis, but also by cholecystitis. In some way, the chronic infection, in the duodenum, creeps up the common duct and secures a foothold in the gall-bladder, or, what is equally probable, the bacteria escape from the tonsillar lymphatic system into the vascular system and then are eliminated through the portal system and hepatic veins into the bile-ducts.

Toxemic Myocarditis

In these two ways, then, the infection of the gall-bladder is initiated, but the result of the infection often remains very slight or obscure for months or even years. Like lead poisoning, however, the infection of the gall-bladder under certain circumstances is productive of a toxemia, which, cumulating, eventually terminates in a remote, selective and localized, disturbance. In one instance, this chronic intoxication may show itself as a neuralgia of a single nerve or it may manifest itself in the form of herpes zoster; but, either from the character of the toxin or the disposition of the tissues, one very common manifestation is that of myocarditis. The heart withstands the infection for a long time, then suddenly breaks down and gives evidence of dilatation, and we see dyspnea and arrhythmia.

During the past fifteen years, I have reported upon a large number of cases of this kind, and they were encountered in persons ranging between 28 and 72 years of age. The symptoms have been those of a very mild and chronic toxemia, associated with slight anemia. The leukocyte-count generally has been above normal, but not much more than 12,000 or 15,000. A rise of temperature never has been conspicuous; sometimes it is below normal and sometimes half a degree above normal. A high degree of blood pressure does not always accompany this condition, although as a rule the pressure is in the neighborhood of from 160 to 180. Frequently the patients are troubled by drowsiness, especially after a meal. They are unmindful and ignorant of their real condition, until a sudden dyspnea appears or until fluid accumulates in one of the serous cavities. Then they consult a physician in regard to their shortness of breath.

An Illustrative Case

In order to illustrate this condition by concrete examples, I will recount two extreme cases, in their manifestations as well as in the outcome.

The first case is that of a man, 28 years of age, who had been operated upon by me for a large localized periappendical abscess, in 1894. It was necessary to remove the appendix and drain both sides of the abdomen. The patient recovered rapidly. During the following seven or eight years, this very active man had frequent attacks of dyspnea and palpitation of the heart. Four years

after his appendicitis, I made for him a diagnosis of chronic cholecystitis and urged drainage of the gall-bladder as the only rational procedure, but he refused consent. During the following years, he had one or two attacks, each year, of cholecystitis, there being pain, tenderness over the gall-bladder and occasionally an attack of vomiting. I saw him quite often in these attacks, and every time I discovered exquisite tenderness over the gall-bladder, and each time I recommended drainage of the gall-bladder.

During all these years, the man complained less of the attacks of the pain than of the almost daily attacks of dyspnoea and palpitation. Not until 1905 did he exhibit signs of jaundice after the attacks of abdominal pain. The later attacks had been so violent that he had received hypodermics of morphine from a neighboring physician, treatment I never was willing to give. Finally, in an attack, he consented to an operation to be performed next day. So, I gave him a large dose of morphine subcutaneously shortly after midnight.

The operation was done by making a 1½-inch incision over the perfectly palpable Riedel lobe, bringing the gall-bladder into place and fastening it to the upper and lower corner of the wound with two catgut stitches, opening between the artery-forceps, evacuating several hundred calculi, then placing drainage-tube, 4 inches long and of a diameter of one's little finger, and fastening it in place with a single silkworm-gut stitch. The operation was completed, under gas-oxygen anesthesia, in less than fifteen minutes on a Monday afternoon. The patient walked out of the hospital Friday afternoon of the same week, in order to be present at the anniversary-day of his wedding, invitations for this having gone out before the operation was contemplated.

Following the operation, drainage was continued for three months, during which time the cardiac dulness diminished in breadth, from 5 1-2 inches back to the normal. The dyspnea and palpitation disappeared and never have shown themselves since. The man rapidly put on weight, and has been perfectly well during the last ten years.

In this instance, the source of the primary infection of the gall-bladder doubtless was the same as that of the appendix. It was either from the patient's teeth or from his tonsils; although not impossibly it may have resulted from an infection secondary to the periappendical abscess.

Quite different is the history of a second, and recent, case. This was a man 68 years old, an active business man, who had not been sick during all his life (so far as can be learned from the anamnesis) until six years ago, when he was taken with a violent attack of abdominal pain upon landing after a voyage across the Atlantic. He had severe pain in the region of the gall-bladder, and vomited. He was sick for eight or ten days, during which time he was slightly jaundiced. Following this attack, he noticed some dyspnea when going upstairs. He began to feel that his heart was not just what it ought to be. He was assured by specialists that there was no valvular lesion; still, their treatment did him no good. Two years ago, he was obliged to stop his active life and take protracted vacations. The dyspnea, however, did not disappear entirely and he became so weak that he was unable to walk more than a few rods on the level. In spite of the most skilful attention, fluid appeared in his right pleural cavity and he was aspirated repeatedly. Under a local anesthetic, his tonsils were completely enucleated. The condition of the heart did not improve. The fluid appeared in the right pleural cavity in spite of repeated aspirations and also showed itself in the abdominal cavity.

When I first saw the patient, I was convinced that there was a chronic gall-bladder disease, because of the protrusion of the lip, or lobe, of the liver known as Riedel's lobe, this covering the tender gall-bladder. After several days of confirmatory observation, I recommended drainage of the gall-bladder under local anesthesia. Consequently, early in March the gall-bladder was drained and a gallstone the size of a robin's egg removed. The patient declared that the operation was less painful than any of the aspirations of the chest. After this operation, the condition of the heart greatly improved, and the serum did not show itself in the pleural cavity again until several weeks later, when, following a cold, an aspiration became necessary.

During the past fifteen years, I have operated upon more than 30 patients for myocarditis, draining the gall-bladder and, frequently, removing gallstones. Two of my patients died while on the table, one of them, a man of 54 years, before the operation was begun, and the other, a man of 72 years, after the operation was finished. One patient died in consequence of obstruction of the intestine ten days after a difficult operation under general anesthesia, and in which the stone was found in the cystic duct, the gall-bladder contracted and the biliary ducts

dilated. One patient died after a second operation performed, without my being consulted, eight months after the first operation.[1] In this case, I had an opportunity of performing an autopsy (the only one in this form of disease) and proving that the myocarditis was not owing to disease of the coronary arteries.

[1]This operation was undertaken for a supposed pancreatic cyst., but it developed that a twisted omentum formed a cyst near the pancreas. The twist was due to a slight omental inguinal hernia which had been reduced but still remained incarcerated.

Many of my patients who were in a desperate condition when I operated, obliged to sit up all night and confined to the house for months, are now well and active.

Myocarditis brought on by chronic gall-bladder infection is not an infrequent condition, and when the diagnosis can be made and the gall-bladder drained under a local anesthetic it is practically devoid of danger and is productive of most favorable and satisfactory results.

Radiant Light and Its Therapeutics

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[*Continued from page 731, August issue.*]

General Application

RADIANT light and heat should be applied to the uncovered skin. For general tonic effects, the rays should be applied to the entire body, which should be in a recumbent position. The rays of light should fall perpendicularly to the body and the reflector should come as near as possible to the skin without injuring it. To obtain the effects of the heat along with the light, the lamp should be continually moved back and forth over the area being treated. If the entire body is being treated, it seems better to treat the back first and then the front of the body.

When employing the very high candle-power lamps, the operator should wear colored goggles and some opaque substance, such as chamois-skin, over the hand he uses in stroking the body. The patient himself may stroke his body, when this is practicable, when too much heat is felt. The patient must be instructed to keep his eyes closed when they are not protected.

When the skin is very sensitive and one wishes to bring about a profound hyperemia, applying a blast of cold air through an air-spreading nozzle connected to a compressed-air apparatus is very efficient. We have had winged pieces attached to our shade in such a way that the motion of the lamp either back or forth or sideways or twisting will create a breeze over the body, thereby enabling us to bring about a more profound hyperemia, and without any discomfort to the patient, than is possible without such a device.

Another excellent method of using radiant light and heat for general treatment, to bring about rapid perspiration, is, the use of the bath-cabinet, so arranged that 50 or more incandescent lamps surround the body. If the cabinet be ventilated by holes in the bottom and top, perspiration can be brought about much more quickly than if the cabinet be tight.

Radiant light and heat are being satisfactorily employed, in connection with concussion and other agencies, in splanchnic neurasthenia, goiter, rheumatism, gout, sciatica, lumbago, torticollis, asthma, gastric diseases, sprains, neuroses, intermittent heart, high blood pressure, kidney diseases, sexual weakness, catarrh of middle-ear, earache, tonsillitis, suppurative tonsils, catarrh of the cervix uteri, amenorrhea, dysmenorrhea, professional paralysis, psoriasis, eczema, acne, and many more conditions.

For carcinoma, we are obtaining very good results from the 2000-candle-power lamp and oxygen vapor—both employed daily.

For x-ray burns and for all forms of infection, no better antidotes are known than radiant light and heat.

I am receiving some very good reports from those who are using the 2000-candle-power lamp for treating specific urethritis and its sequels, as well as for prostatic troubles. For these treatments, the insides of the thighs are protected by means of asbestos paper, and the lamp is so adjusted that the light- and heat-rays center well upon the perineum.

I am also receiving very flattering reports from those who are using radiant light along with other methods for treating syphilis. Arc-light- and incandescent-light-baths seem to enhance the effects of mercury in the treatment of syphilis and its sequels.

Chromo-therapy

I have purposely omitted to mention in this paper the use of colored radiant light in

therapeutics, as I shall speak of it in a subsequent paper.

Several years ago, Dr. Edwin Babbitt wrote a book entitled "The Principles of Light and Color." This book is now out of print, but W. J. Colville's small book, bearing the title "Light and Color" and published by the Macoy Publishing & Masonic Supply Company (45 John St., New York City), represents the essence of this great work.

The more we study light, both white and colored, from a therapeutic standpoint, the more we are convinced that Doctor Babbitt is right when he says: "Sunlight constitutes a truly celestial materia medica more potent and enduring than any cruder elements, provided we know how to deal with it. Minerals are at the lowest end of nature's scale of forces and are so crude that their particles cannot float in the atmosphere; consequently they are held down in the bosom of the earth. The vegetable world, which contains all forms of nourishment necessary for the human body, is devoid of the coarser mineral elements, which are sifted out by a powerful and most ingenious process in nature's perfect laboratory. We cannot be hampered and confined within the narrow walls of any restricted method of practice that excludes all that some exclusive company of persons may not approve. Freedom of thought and action, within rational bounds, should be demanded by all who embark in any healing ministry, or they will soon find their usefulness painfully limited."

The more I study natural forces in relation to diagnosis and therapeutics, the more I am impressed with Doctor Babbitt's comprehensive statement, that "harmony can not be brought about until nature's affinities are satisfied."

Electric-Light-Bath Cabinets

Another excellent method of using radiant light and heat for general treatment, to bring about rapid perspiration, is the use of the bath-cabinet.

1. *Construction.*—I have found that most of the electric-light-bath cabinets are wrongly constructed, in that they are made practically airtight. We know that a well-ventilated room can be heated more quickly than one that is kept closed. I have found that there should be a ventilating-hole in the bottom of the bath-cabinet. This can easily be arranged, while the stool on which the patient sits should be directly over it. The lining of the cabinet seems best to be made of opaque glass, rather than of mirrors. From 50 to 100 60-watt tungsten lamps seem to be required.

The cabinet should be about 40 inches square and high enough so that a large person can sit conveniently on the stool, with the lid closing around his neck. There should be air-vents at the back, conveniently placed, one on each side of the patient's head. A 2-inch hole on each side of the head and a 3-inch hole in the bottom are about right. Of course, there must be holes in the baseboard of the cabinet, to allow the air to go under, unless the cabinet is placed on posts about 3 and 4 inches high. That leaves a place for the accumulation of dirt, and the cabinet

Electric-light Bath Cabinet

necessarily is quite heavy. Therefore, the ventilation can come in by a galvanized iron pipe through the baseboard to the central ventilating-hole. Such a pipe on each side of the cabinet or on the front is ideal. This pipe should be covered with a brass wire mesh. It can be kept clean by occasionally blowing through it a blast of air from the inside.

It is well to have the switches on the outside of the cabinet, so that the patient cannot operate them from within.

Actual experience seems to prove that a large volume of light, in proportion to heat, is desirable.

I prefer a cabinet in which the patient sits upright to one in which he reclines.

After having built bath-cabinets myself and experimenting a good deal with them, I have come to the conclusion that the Burdick Cabinet Company, of Milton, Wisconsin, makes the most ideal electric-light-bath

cabinet now on the market. It appears to more than meet all requirements. An illustration of one of their numerous styles is shown herewith.

2. *Therapeutic Application.*—The electric-light-bath seems to be indicated in all forms of arteriosclerosis and its sequels. All rheumatic conditions seem to be greatly relieved by the electric-light-bath. Diseases of the respiratory and urinary systems are greatly benefited by the electric-light-bath. In fact, inasmuch as light in association with heat so greatly enhances metabolism, there is no condition that is not benefited if these two agencies are employed judiciously.

As an adjunct to the treatment of syphilis, especially when giving mercury inunctions, I know of nothing better.

The fact, that in a properly constructed electric-light-bath cabinet the light strikes nearly all parts of the body at the same time, makes it very desirable.

Each period of treatment should last at least until the skin becomes moist. It can then be carried further, should the indications require it. For reducing weight or for toxemias, severe sweating is decidedly desirable, provided the patient is in a physical condition to endure the procedure. Drinking one or two glasses of cold water will increase the perspiration.

If the patient is inclined to faint easily, the application to the head of a cloth wrung from cold water will generally prevent the nauseated feeling sometimes experienced by these persons when exposed to intense heat for a while.

Immediately after the patient leaves the bath-cabinet, it is well to rub him down with Turkish towels and to spray his body with alcohol, bay-rum or other appropriate rapidly evaporating liquid. In some conditions, we have found that spraying spirit of nitrous ether on the body after an electric-light-bath is better than anything else. After the body has been sprayed, it is well to let the patient dress and lie on a couch for a few minutes before going out.

If we wish to give the powerful radiant-light treatment to any special part of the body, it is best to do so after the electric-light-bath.

If one be equipped for giving oxygen-vapor inhalations on reclining chairs or couches, it is well to let the patient take that treatment for fifteen or twenty minutes after the electric-light-bath.

I never have known of a patient taking cold after these treatments when conducted in the manner here prescribed, even when they went out in zero weather. This cannot be said of Turkish or Russian baths. The electric-light-bath seems to enhance metabolism so rapidly that the resistance of the body is greater than when one takes any other form of bath.

In conclusion, I wish to say that no one can realize the therapeutic value of radiant light and heat until he has used it in a thorough and scientific manner.

Clinical Reports

Case 1. Miss J, age 26. Severe pain in right inguinal region and tenderness over McBurney's point. Diagnosed by her former physician as appendicitis and operation advised. When I first examined her, she could not bear the weight of my hand on the tender spot. Strong light from a 500-candle-power lamp was given for twenty minutes over the tender area, whereupon it could be palpated without any sign of pain. I prescribed olive-oil, one tablespoonful, three times daily. The following day only slight tenderness was present, which was quickly relieved by light applied ten minutes over the right inguinal region and ten minutes over the left, and the same over the lumbar region. The third day there was no tenderness. Light was also given over the entire body, along with sinusoidalization, to relieve the constipation. Same treatment given the fourth day. After the sixth treatment, the bowels and general condition were so much improved that I considered her well. It is four years since the treatments, and there has been no return of the trouble.

Case 2. Miss E, age 24. Anemic and suffering from weekly attacks of migraine for four years. Full light treatment from 500-candle-power lamp given over entire body, fifteen minutes to the anterior and the same to the posterior surface. I vibrated, to inhibit sensation in the seventh cranial nerve, and concussed the seventh cervical vertebra. Seven of these treatments were given during two weeks. This was about three years ago, and her general condition has been good ever since.

Case 3. Miss G, age 32. Came into my office, suffering from lumbago, which she had had for several days; could get no relief, although she had been to her family physician. I exhibited the full power of the 500-candle-power lamp over the lumbar region for thirty minutes, and vibrated it about five minutes. She left the office, feeling no pain at all. For over eight weeks she had no return of the pain, then had a slight attack,

when three more treatments were given with light and vibration. She has had no return of pain for four years.

Case 4. Miss D, age 28. Had severe pain over left ovary and had a lame back. I examined the uterus and found it large and retroverted, and a large erosion about os. I gave full power of large lamp over the abdomen, heat and light per vaginam, and static-wave treatment per rectum, daily for two weeks. I had her wear a pessary, along with carbenzol tampon in the os, for one week. Erosion was all gone and all tenderness disappeared from the abdomen and back. There is no return of the trouble for past three years.

Case 5. Mrs. S, age 60; married; no children. Suffered from asthma for years. I gave 500-candle-power light over chest and back, ten minutes each, daily for a week, and oxygen-vapor inhalation for twenty minutes each day. For six weeks she had no inconvenience from the asthmatic trouble, then had a slight return. I exhibited light as before, three times, and gave oxygen vapor for about a dozen treatments. After two years, there has been no return of the trouble. I do not know which helped her more, the light or oxygen vapor, but think each had a share.

Case 6. Mrs. A, age 42. Chronic bronchitis for years and coughed till worn out. I gave the same treatment as to the asthmatic patient (No. 5), but added vibration between the 4th and 5th cervical vertebræ. After fifteen treatments, there was no cough to speak of and the general condition has been excellent for now three years past.

Ulcer of the Stomach

Case 7. Mrs. L, age 50. Menstruates regularly. Mother of two healthy grownups. Had gastric pain for two years, which kept her awake nights. Severe burning in the esophagus and constant coughing during the day because of it; pain radiated to right scapula-vertebral border; aggravated by hot food or drink; relieved, up to two weeks before I saw her, by lying on her back. Had no appetite. The case had been diagnosed as ulcer on the anterior wall of the stomach. I examined her and found the stomach of normal size, but very tender at the cardia and fundus. Also tenderness between the four upper thoracic vertebræ, and between the first and second lumbar. The urine showed acid equal to 58 Cc. 1-10 normal sodium hydrate, but nothing else abnormal.

I vibrated the sensitive nerves to inhibition of pain, exhibited 500-candle-power light over the stomach for twenty minutes and the same length of time over the back above the waist-line. I gave static-wave treatment over the fundus for ten minutes. Before leaving the office, the patient said all pain and soreness were gone, and she did not cough. Next day she reported a good night's rest and only slight pain fifteen hours after the first treatment. I gave repetition of the first treatment on three consecutive days, and after eleven days the patient reported having had no pain, no coughing, and good nights' sleep since the second treatment. I put her on regulated diet and reduced the acidity of the urine to 28 Cc. 1-10 normal sodium hydrate. She has been under observation for a year, and there is no return of the trouble.

Case 8. Miss C, age 14. Enlarged and painful tonsils. A surgeon advised enucleation, but her mother brought her to see me first. I found her face and throat very tender to the touch and tonsils very much enlarged; voice impaired; general condition "run-down." She was just beginning to menstruate. I gave 500-candle-power light over the entire body, twenty minutes front and twenty minutes back, for three treatments on consecutive days. Then twenty minutes on face and throat and twenty minutes over the entire body, for seven treatments on consecutive days. Then I used high-frequency currents from a static machine, through a surface-vacuum tube applied to the region just below the inferior maxilla, a few times, and ended the treatments by giving fulguration to the tonsils. The fulguration treatments were about five in number. The tonsils contracted to normal size, and the patient has been well for the past three years, her general physical condition being "perfect."

"Cancer of the Stomach"

Case 9. (Nov., 1914.) Mr. Z, age 42, professional athlete for years. Nine months before I saw him he had a burning sensation in the esophagus and tenderness at the cardia. His family physician sent him to a surgeon, who advised operation. He found what he said was cancer on the anterior border of the fundus, but did not cut into it, except for a specimen. Six weeks later, the patient's condition was so much worse and he was losing weight so fast that another surgeon was consulted. He advised another operation. After the operation, he reported "inoperable cancer of the stomach" and said the patient would not live over two months.

Six weeks after the second operation, the patient was brought to me in what seemed a dying condition. He had lost 60 pounds since the first operation. He was too weak to be examined, so, was put on the operating-table and the 2000-candle-power lamp placed so that the rays fell at right angles to the stomach, and treatment continued for one hour. He reported that the burning pain was greatly relieved. The next day he said he had had a good night's rest for the first time in three months. I gave him the same treatment, with the addition of oxygen vapor from the Neel-Armstrong generator. The next day he was much improved. I continued this treatment for two weeks before going through an examination, as he did not seem to be able to bear much.

An examination by electronic methods showed a profound toxemia. By the same method, we located an inflamed thickening on the anterior border of the fundus, which gave cancer reaction, and spasmodic closure of the pylorus, which latter was relaxed by concussion of the 5th thoracic vertebra. We also found enteroptosis and nephroptosis, with dilatation of the aortic arch.

For about two months, I gave daily treatments as follows: Concussion of the 7th cervical vertebra, to increase vagal tone. Concussion of the 12th thoracic vertebra, for nephroptosis. Concussion of 4th to 6th thoracic vertebræ, for stomach stimulation. Concussion occupied about four minutes at each sitting. I gave 2000-candle-power light over the stomach for twenty minutes, and oxygen-vapor inhalation for twenty minutes. The patient gained over 10 pounds while under treatment and could eat everything; slept and rested well. This patient can never be cured, as he was so mutilated by the two operations, and wide adhesions resulted.

Another Case of Ulcer

Case 10. Mr. S, age 38, laborer. Has been to several clinics, and all diagnosed his trouble as ulcer of the stomach, and operation was advised; then he was sent to me for examination. By electronic methods, we made positive he had no ulcer. We found, by spinal reflex methods, that he had gastritis and a contracted aorta, caused by enteroptosis. He also had intercostal neuralgia, which was one cause for the erroneous diagnosis of ulcer of stomach. I put an abdominal support on him the first day he came in. Gave 2000-candle-power light over the stomach, for twenty minutes, and concussed 4th to 6th thoracic vertebræ daily for a week. I froze tender spot on spine from which the "ulcer pains" arose. For the past two months, he has been well and is doing hard work.

A Case of "Appendicitis"

Case 11. Man, age 32, married; mural artist. Had severe pains in the right inguinal region for over a week. Had seen two surgeons, who told him he had appendicitis, and the morning of the day I saw him arrangements were made for an operation. He came to me in the evening, complaining of unbearable pain located about the cecum. He told me that he was supposed to be at the hospital for an appendectomy the following morning, but had been advised to see me.

I gave him about 4 ounces of pure hydrocarbon oil, then put him on the table with the 500-candle-power lamp as close to his abdomen as he could bear it. I kept him in that position for about two hours, after which I began carefully manipulating the painful area, but from which the pain had disappeared. I palpated a hard mass about two inches in diameter. This mass I found was movable, and I began carefully pushing it up and through the colon. Within half an hour, I had it in the descending colon, and within three hours from the time he came into my office he passed a scybalum about two inches in diameter, along with a quantity of other fecal matter. He went home feeling well, with the exception of being a little weak. He sent word to the surgeon that he would not be on hand for the operation.

The next morning, he came into my office, and I gave him an hour's treatment with the light and also another dose of oil. I gave him another treatment the same evening. After that, I gave daily treatments with the 500-candle-power lamp over the abdomen for a week. All pain and soreness were gone by that time and he was in perfect condition. For four years he has had no return of the trouble.

Colds: How We Take Them and How They May Be Cured

With Some Personal Experiences

By J. M. French, M. D., Milford, Massachusetts

OF ALL socalled slight ailments, none is more common, and few are more troublesome, than a common "cold."

It seems to me that we have very little definite knowledge of the nature and causes of what we call colds, let alone their treatment. Perhaps, however, this is only because I myself have very little of this definite knowledge and think others are as ignorant as I myself am. I am free to confess to my own ignorance in this direction and my willingness to learn. So, do not accuse me of posing as an authority because I venture to write a paper embodying my personal ideas on the subject.

What, Really, Is a Cold?

The first point to be settled is, What is a cold?

Gould's Medical Dictionary (Practitioners' edition) defines a cold as a term "popularly used for coryza and catarrhal conditions of the respiratory tract." Which reminds one of Doctor Johnson's famous definition of network: "Anything reticulated or decussated, with interstices at equal distances between the intersections."

Turning now to "coryza," we find that it is a "catarrh of the mucous membranes of the nasal passages and adjacent sinuses, popularly called 'cold in the head.' "

Having thus gained a clear (?) idea of the meaning of "coryza," we next look for the meaning of the alternative designation and find this: "Coryza; catarrh; inflammation of a mucous membrane."

So much for the medical definition of a cold. Turning next to Webster's Unabridged, we find that the definition given out to the laity under the head of "Cold": "A morbid condition of the animal system produced by cold; catarrh."

As a last resort, we now turn to the New Standard Dictionary, to which we always go with the expectation of finding exactly what we want; and here we get the following definition of a cold, in its meaning in pathology: "A disorder usually caused by exposure to cold or damp or to a draft; as, a cold in the head (an acute catarrh); a cold on the lungs."

Result: I started out by intimating that we had but little definite knowledge of the nature and causes of colds. But it begins to look as if I was mistaken. I am learning. Look: A cold is a disorder; a morbid state of the animal system; coryza; catarrh. Coryza is a catarrh in the head. Catarrh is an inflammation of a mucous membrane. Colds are produced by exposure to cold or damp or a draft of air.

Here, then, is the material for a definition, and I am inclined to take back the slur with which I set out. A cold is an inflammation of a mucous membrane and is caused by the exposure of some portion of the surface of the body to cold or dampness or a draft.

Attempted Theory About Catching Cold

As to a "cold" being caused by exposure to cold, my personal belief is, that it may be caused by heat as well as by a low temperature. In fact, the real cause seems to be a localized difference in temperature with respect to the body. One may be out in cold weather for hours and get thoroughly chilled, yet, escape the peculiar effect which we call a "cold," and then the mischief may all be done by one's standing by the hot fire to warm up. One may ride in an open electric car on a cold day, with the wind blowing all around him without injury; and he may contract a bad cold in a closed and warm car, but having a window near him open and through which comes a draft of air and strikes him.

My Theory Regarding "Colds"

If my theory is right, the trouble all comes about through the action of the vasomotor nerves. Cold causes a contraction of the capillaries of the skin and the minute arterioles with which they are connected, thus lessening the amount of blood in a limited area of the surface; and, of course, the surplus blood is sent to some internal organ, where it causes congestion and inflammation of the "inside skin," or, mucous membrane. And, then, is this congestion of necessity limited to the mucous membrane, I wonder, or may it not include the adjoining tissues? If the extra blood goes to the nasal

mucosa, we have a cold in the head; if to the throat, some form of sore throat; if to the bronchial tubes, a bronchitis; if to the lungs, a pneumonia; and so along the line.

So, now we have got down to a fairly definite theory as to the nature and causes of a common cold. But, is this theory the correct one? Is it true?

And right here there comes in that up to date individual, the laboratory-physician, the bacteriologist, with his ubiquitous, omnipresent germ! And he tells us that a cold is a germ-disease; that we do not take cold from exposure to cold or dampness, but from exposure to some microscopic bug! There is, positively, absolutely no danger in going about thinly clothed in cold weather, or sitting in a draft, or going all day with wet feet, or, indeed, in exposure to cold in any way whatsoever. The only danger threatens from bacteria. The only cause of colds is the germ. Yet, not *the* germ, but *a* germ, since there are many different germs, each with its own peculiar kind of teeth, and each causing a different kind of cold, each working in a different way, and, worst of all, each spiteful thing calling for a different kind of treatment!

Some persons, it is true, do not "catch" cold under conditions where another certainly would; and the same person may take cold under much less provocation at one time than at another. This we have been accustomed to explain as due to lowered vitality and lessened resistance on the part of one person and in certain conditions, as compared with an increased vitality and greater resisting power in other individuals and under different conditions. But, it can be explained just as well on the germ-theory, by saying that these little animalcules have their preferences as well as do human beings, and that they seldom attack people with whom they are well acquainted, but have a special affinity for those to whom they have never been introduced! Immunity! immunity! ! immunity! ! !

But, how would it do to combine the two theories and say that germs, like potatoes, can grow only in a fertile soil; that pine-trees and strawberry-plants do not thrive in the same kind of soil; that the favoring soil for the cold-germ is found in the condition of depression that is caused by exposure to cold, as well as to the lack of resisting power that is found in all kinds of ill-health; and that the special fertilizer which hastens its growth is found in the mucus that is so abundantly secreted by the membrane as the result of the congestion and inflammation? Please, bear in mind that these ideas are thrown out merely as theories and that I do not guarantee to stand back of anyone of them when it comes to a showdown. Anything to induce thought and, perhaps, to bring about discussion.

Curing a Cold a Contentious Matter

Enough about the causes of colds. Now as to curing them. Can a cold be cured? Can it be prevented, aborted, cut short, modified in any way? Or is the only thing to do, to let it run its course?

And here, though many would answer most of these specifications in the negative, yet, the whole medical world, and the lay world as well, seems to agree that one must do something! "Never neglect a common cold."

So far they all are agreed. But when we go further and ask what shall we do for it in order that it be not neglected, then there are as many answers as there are pages in the Koran. One says we should drink no water or other liquids, another advocates flushing the system with a superfluity of water. One overfeeds a cold, another starves it. One works hard to induce free perspiration, another goes to bed and stays there until the cold has left him. All sorts of drugs are prescribed—sprays, gargles, powders, pills, tablets, cathartics, diaphoretics, diuretics, febrifuges, anodynes, even opiates—and still the list is young.

Now comes the personal experience. From my youth on, I have been unduly subject to colds. Easily acquired, they were with difficulty gotten rid of. As a whole, my general health has been good throughout. I have a good appetite, good digestion, never am constipated, my circulation has been vigorous, and I have been much in the open air. Why, then, is it that I have been so prone to "take cold"? I never have been able to understand—the fact, though, remains.

A Personal Encounter

Since a cold uses me up pretty thoroughly and makes me uncomfortable for a long time unless I am able to throw it off in the first stage, I long ago learned to try to abort it. I can't say that I have tried all the remedies that have been recommended, and you wouldn't believe me if I did, for, in spite of them all, I still am alive. For all that, I have had experience with a good many of them. Hot drinks taken at the outset sometimes are effective, and are well worth

trying. Laxatives I do not need, and seldom use. Diaphoretics have their strong points, but for me the great objection to them is, that they leave me with the pores of the skin open and more than likely to take cold again the next day. But, a doctor has to be ready to go out in all weathers. Fasting I never tried. I had, for many years, a patient whose favorite cure was to fast, and he died, at last, of pneumonia and innutrition, after having faithfully starved himself for years. Aconite, acetanilid, phenacetin, aspirin—no, I never tried aspirin, but I have used the others, with more or less good results—usually less.

Finally I settled on quinine. It is a simple remedy, convenient to carry, easy to take, and, in the doses I use, produces no unpleasant effects. Better than all, it is the most effective remedy I ever tried. The longer I use it, the better success I have with it.

Now, quinine is a popular remedy for colds, and has been for years. But, go to the standard textbooks on materia medica, therapeutics, and practice of medicine, and you will find little encouragement for its use. Search the pages of *The Journal of the American Medical Association*, and you will get such information as this: "Quinine sulphate has been used for years as an abortive treatment of colds, and the laity . . . . have always resorted to this drug. Small doses would probably not have any very decided action; large doses are inadvisable at this stage, because of the tendency to congest the internal ear." (*J. A. M. A.*, Jan. 9, 1915, page 150.) So, there you are, stuck fast between Scylla and Charybdis.

But eventually I did succeed in finding a book, written by an acknowledged "authority," which gave me a satisfactory explanation of that action of quinine on which its effect in aborting colds is based. This is no less authority than Sajous, who, in his "Internal Secretions," volume ii, pages 1240 to 1245, of the second edition, 1908, writes as follows:

Why Quinine's the Thing. Compare Sajous

"Moderate doses of quinine stimulate the general vasomotor center and cause general vasomotor constriction. Contraction of the central vascular trunks being thus produced, the blood supplied the peripheral vessels is increased, and the reflex sensibility of the cutaneous sensory nerves is correspondingly influenced.

"Larger therapeutic doses likewise stimulate the general vasomotor center, but this action is soon supplemented by another, i. e., direct stimulation of the sympathetic center, and, as a result, by increased propulsive activity of the terminal arterioles. The peripheral vessels are thus not only supplied with an unusual volume of blood, but the pressure to which the terminal arterioles submit the latter, as it passes through them, forces the blood into the cutaneous capillaries with sufficient violence, generally, to cause marked flushing. A sensation of fulness in the head and ears, due to cerebral hyperemia, may be accompanied by more or less severe headache, tinnitus, and deafness, the latter being, sometimes, permanent, especially when the use of the drug is continued.

"It is . . . . by producing capillary hyperemia, especially of the cutaneous tissues, that quinine is beneficial in many other conditions. It can thus abort acute coryza, tonsillitis, subacute bronchitis, and so on, if taken early and in sufficient quantities: 3 grains every two hours until slight headache or flushing of the face occurs, when the dose is reduced."

This is the best, and, in fact, the only satisfactory explanation of the action of quinine in aborting colds, that I have ever seen.

Quinine-Therapy Confirms the Speculation

Consider that a cold is a local congestion of some internal organ or tissue, especially a mucous membrane, accompanied by a corresponding blanching or anemia of some portion of the periphery. Note that quinine exactly counteracts this condition, by causing cutaneous hyperemia, with corresponding relief of the congested area of the mucous membrane or other internal organ or tissue affected; thus aborting the cold by its direct physiological action.

Note, further, that except in those cases where there is an abnormal sensitiveness to the cerebral action of the drug, producing tinnitus aurium and painful sensations by small doses, there is no unpleasant effect from the drug in small or moderate doses; that its occasional or even frequent use does not establish a habit or injure the system in any way; that, when a dose of quinine is taken at night, by morning its effects have been mostly produced and the subject is not left with any undue susceptibility to taking cold, as is true of most other drugs given for the same purpose, but is, instead, less liable than usual to the influence of cold. Thus, it will be seen that we have here an ideal drug for our purpose.

There are a few points that should be remembered. First, the dose. For an adult, 4 grains is an average dose, according to my experience. With those, especially women, who are easily affected by quinine, it may be well to begin with but 2 grains. In severe attacks, the usual dose may be doubled; in that case some slight, but only brief, discomfort may be experienced.

Second, as to the frequency and continuance. A dose three or four times a day is my usual rule; say, in the morning, before dinner, before supper, and at bedtime.

Third, concerning the form in which taken. Here I have learned by sad experience that quinine pills can not always be depended upon, for they sometimes get hard and will not dissolve. It is far safer and every way more desirable to take the alkaloid in the form of capsules, when action is assured, solution and absorption occurs speedily, and the effect is more positive.

Fourth, the time to begin. This, briefly, is as soon as the first symptoms manifest themselves. Anyone who is in the habit of taking cold soon learns how it is likely to begin in his own particular case and what the early symptoms are.

As for myself, the usual manifestations are, an oversecretion of mucus in the throat and nasopharynx. Often I go to bed all right and wake up in the night with the familiar first symptoms of a cold. Then I know that prompt action is preemptory, and I get up and take from a small flat vial, which I always carry, a 4-grain capsule of quinine and swallow it with a little water. Or, if I know at bedtime that I have taken cold, I take a dose then. The chances are that in the morning the suspicious symptoms will have disappeared and no more medicine will be needed. But, if not, I take a dose of the quinine on rising, and repeat before dinner, supper, and at bedtime—if this should be needed.

Beyond five or six doses, I do not go, for, if the cold is not stopped by this time, further use of the drug is without effect. I am aware that sometimes the symptoms might have subsided without the quinine. But long experience has shown me that far more frequently this is not the case; and, also, that no harm will be done, even if the dose was unnecessary. And almost always, if taken early as I have described, the cold is aborted promptly. Can anyone tell me of a better remedy?

—

["Can anyone tell of a better remedy?" That is for the family to say, and the door is open for comments, criticisms or suggestions. Personally I think quinine is a good remedy for a beginning cold; but I do not think it the only remedy, or even the best remedy. Indeed, I would not stake my reputation on any one drug. Doctor French has learned by personal experience that quinine suits his case; but many other physicians are doubtless equally confident that there are other things which give even better service. My own opinion is that there is no "specific" for a cold, and that every patient should receive the individual study and care demanded for success in the management of more serious diseases. After all, even a "cold" may prove mighty serious.

As an illustration, I should not think of treating a man who had stuffed himself with sausage and sauerkraut, then filled up on beer, got "all het up" at a dance, and as a consequence came down with a bad cold, in the same way that I would a delicate, poorly nourished, anemic girl suffering from an apparently similar affection. Neither would I treat a pneumococcus invasion of the upper air-passages in the same way I would an acute attack of the grip or a "rose cold." Quinine might be of value in all these conditions—and it might not.

There are many remedies valuable for the treatment of colds. Here are a few that I have found good:

If the bowels are sluggish—if there is acute or chronic constipation—the patient should be given a quickly acting cathartic. It is usually indicated.

In febrile cases—and the clinical thermometer should always be used—there is nothing better than small, frequently repeated doses of aconitine. Patients who have fever should never be permitted to "be up and about."

When the skin is cold and pale, with a tendency to chilliness, atropine is indicated, usually with aconitine, for these patients often have slight rise of temperature. Quinine is often of value in these cases, and does good, not only by causing capillary hyperemia, but also by stimulating phagocytosis.

The function of the skin should always be maintained, as a part of the effort to maintain vascular equilibrium and reduce internal congestion. Aconitine and atropine help to bring this about. So do hot baths, foot baths, and such old fashioned remedies as Dover's powder, acetanilid and spirit of nitrous ether. Keep the patient warm and in bed when stimulating a flow of perspiration.

Do not forget that, after all, *the germ* is the fundamental cause of a cold. Go after it.

Doctor Biehn tells me that iodine has a specific affinity for the pneumococcus and is death on the influenza bacillus. Thousands of physicians will testify to the certainty and rapidity of action of calx iodata (calcidin) in beginning colds. Whatever else I may use, this usually seems to me indispensable.

Many rheumatics suffer from recurring colds. An examination of their throats will often show enlarged tonsils, which may require attention. These people respond quickly to the salicylates.

When the defensive power of the organism is low, use remedies which will increase it. Nuclein acts beautifully in many instances, and may be given in association with quinine, calx iodata, guaiacol, or almost any other indicated remedy.

Keep the mouth, throat, and nasal cavities clean. Various sprays and inhalants, selected to meet local conditions, have an important place in treatment.

Remember how important it is to *know* just what it is that is causing the trouble. Make (or have made) a bacteriologic examination of the secretions of the air-passages. You may be dealing with a case of diphtheria, pneumonia or tuberculosis. The quicker you learn the nature of the trouble, the better it will be for your patient—and yourself.

Chronic colds or recurring colds often yield to bacterin treatment. If other things fail, have an autogenous vaccine made; then, if you cure a patient suffering from these endless processions of "winter coughs," he will rise up and call you blessed.

This is a subject that interests me, and I am thankful to Doctor French (as I am sure you are also) for starting the ball to rolling. Haven't you something to suggest?—ED.]

An Old Doctor's Life Story

An Autobiography

By ROBERT GRAY, M. D., Pichucalco, Mexico

EDITORIAL NOTE.—This article is the seventh instalment of Doctor Gray's autobiography. At the age of eighty-five he is giving the readers of "Clinical Medicine" an intimate record of his adventurous and romantic life, ranging from his experiences as a student in Paris and as a surgeon in the Confederate Army, to his struggles with deadly disease in the tropical jungles of southern Mexico. The story rivals in interest any work of fiction.

[*Continued from page 749, August issue.*]

The Dangers of Travel

WHEN I started south, on horse back, I came to a cabin in a deep, dark canyon just as night was coming on, after having traveled for hours without the sign of human habitation; and was told there was a house nearby, on the road. The woman would furnish corn for my horse and give me a bite of such as she had to eat. To sleep, I had to go up a ladder through a hole in one corner of the cabin, the bed being in the opposite diagonal corner, the candle to be left at the entrance. I was tired and sleepy, and slept soundly.

Late in the night there was a hubbub and quarreling down below, the dispute being over the partition of booty. Finally the woman awoke and spoke a few soft words, which calmed the wrangle; and soon all was still, save for stentorian snoring; and I also slept again, but only lightly. By and by I awoke with a start and clearly heard someone climb the ladder and then advance with almost catlike tread to about half way to my bed, then stop, making some peculiar noise for some time; when the steps were retraced and someone descended the ladder.

In a little while, the candle was put up on the floor and I was told my food would be ready by the time I could prepare myself. Between the bed and ladder I found some smoked hams hanging; and the noise I heard was the woman cutting out a piece in the dark to fry with eggs for my breakfast. The floor was covered with the sleeping bandits. Naturally, I felt plenty of trepidation; but the woman whispered me to fear nothing, as I was safe from harm. I ate my ration, but with no great relish. The woman had fed my horse and saddled it in good shape. She refused pay; but I flung two Mexican dollars to her children when I was on my horse. It was not yet good daylight when I rode away, and I urged my horse on favorable stretches of road for some miles. I had slept and eaten in the home of a chief of bandits.

Hold-up Men

That experience admonished me to sell my horse and travel by hired conveyances, or

by stage-coaches, where any were running. One day I had a fairly good hack to carry me from one town to another some thirty miles ahead, and the driver, a wretched, ragged specimen, apparently was half asleep, yet, ever alert at bad passages. We were emerging from an ugly mountain-gorge, when three horsemen suddenly appeared in front, with arms ready, shouting, "Hands up!" "With much pleasure, gentlemen!" sarcastically responded the driver, and ere I had time to get my hands well up, there was a blinding flash of fire in my face, and another and another, in quicker succession than it takes to think of it. One of the waylaying gentry was dead, another mortally wounded, and the third galloping away reeling in the saddle. The incident detained us two days while the authorities were making their record, the man being entitled to a handsome reward that was out for the trio, dead or alive. He told me afterward that he had been a Texas ranger for seven years and in many closer calls with Comanche Indians.

Getting Acquainted With "Yellow Jack"

There were squally times in Mexico in the days of that era, and for long after; yet, I finally reached the "Hot Country," in the state of Vera Cruz, when frightfully decimating yellow-fever, of unusual virulence, was depopulating the rural districts up as far as Cordoba, more than 2000 feet above the sea. I knew no secret about its treatment, yet, was no more ignorant than any other, unlimited experience notwithstanding; still, I plunged in, under the advice and layman tutelage of an old Frenchman, who counseled me against intoxicants, though he himself was half-drunk all the time. He advised me to drink plenty of lemonade, a rousing glassful before coffee in the morning; to eat about the same as I might were there no epidemic abroad; and not to be afraid, as sheer fear killed more than half of the victims.

I encountered some rather strange incidents during that dreadful epidemic. There were numerous small ranches starting in the coffee-planting industry, mostly owned by single men, not of the neighborhood, nearly all of those dying who were stricken; and there was an industrious Irish priest hurrying around with a notary to confess them, usually leaving with a title to the property, conditioned that, if the man died of the pending fever—which he was almost sure not to forget to do. I was constantly on the jump, day and night; still, as Doctor Sangrado told Gil Blas, most of my patients died. But so did those of every other doctor in the same field. I had one Irishman, delirious when I first saw him who convalesced encouragingly, and was sitting up in his room. I called, in passing, late one afternoon, when he asked me what sickness he had had. I told him, "Yellow-fever." "Thin oi'll doie!" And the fellow slipped out about dark, got drunk, and was dead in a gutter the next morning.

Saving a Little One

Another time I was called to a one-room cabin at 1 o'clock in the night, where I found on the floor, eleven bodies of persons who had died since 6 o'clock the morning before—the hour when the dead were collected each day. Over in a corner there was the tiny patient, whom I was called to see, in her little crib, the remorseless fever burning up her blood. I went to work with the little waif, with all the zealous assiduity that could have actuated me had she been a full-grown princess of royalty, forgetful or heedless of my ghastly surroundings. And when the first glint of the early morning-sun kissed her little cheek the fever was broken; and I took the pallid but beautiful little orphan up in my arms and carried her to a mother whose babes were all dead. There she got well, grew, thrived, and married, in due time becoming the mother of seven children; and was twice a grandmother the last I knew of her.

I had six weeks of that dreadful ordeal, catching snatches of sleep while seated on chairs, never going regularly to bed in all that time, but eating something with fairly punctual regularity; and was not sick once.

I now look back upon those awful scenes, from the vantage viewpoint of modern science in this enlightening age of progress (the term "enlightened" is too positive for a process no more than in active gestation) with wonder and amazement, that what then was esteemed high-grade medical attainment should have been so stupidly crude. Certainly my scholastic endowment was in the front rank, although my practical clinical experience had been *nil*, save in the fevers and the dysentery of the new plantation, without much useful helpfulness in other fields, among people of another race, in a different climate; my work in the civil war having been exclusively surgical. Nevertheless, all this notwithstanding, I soon found that even the most experienced were as helpless in a great and deadly crisis as was I; that we all were as ignorant as pigs, that knew enough not to have yellow-fever, and, yet, more stupid than the semi-savages of the mountains.

All that we knew about yellow-fever was, that it filled the country with panic, mourning and new-made graves, a state of affairs which we had no shadow of a claim to believe we had modified in any appreciable degree. The truth hangs people, sometimes, and it would have made galley-slaves of most followers of the medical profession of the world in every age of its historical presumption, though ignorantly rather than wilfully criminal.

Eyes Opened to the Truth

I went into a little cove of a valley, of thirty cabins, where there had been 130 souls at the inception of the plague, every person of whom was stricken, no medical man ever once having darkened any door of the hamlet; 31 had died. Just across the river I took the count of sufficient cabins to make the same number of persons living in them when the fever appeared, all of whom were stricken; and, while nearly all had had more or less medical attention, yet, 71 of them died. I said nothing to any person of this medical discrepancy; for all that, it caused me to repent bitterly that I ever had been in Paris, but rather had mingled my worthless dust with that of my perished kinsmen, who valiantly died on battle-plains.

That night I went to my room without eating supper, and sat me down in the rocking-chair, almost as deeply humiliated as I was the night I fled from the parlor scene of my old friend in New Orleans. And there I sat, more stupefied than pensive, in despair of saving imperiled suffering humanity not dependent on surgical intervention, a well-confirmed medical nihilist, far more radical than were some of my preceptors in Paris, their skeptical incredence, fearfully expanded, sinking deep down into the gloomy abyss of my desolate soul. And there came mockingly around, flitting in whirling groups and then passing in slow and solumn procession, my happy young life, blending in the little negro-plays, under the watchful supervision of that old fond black-faced mammy, in the fair land of my birth, for whose homely hearth I had wept so many times, feeling the bitterness of its despair; the wide fields of cane and cotton, and drives in the long and grassy lanes; the clear winding mountain-brooks, teeming with the gamy speckled trout; the herds of deer grazing in the vale or drinking from the tail-run of the mill; the green fields merry with the songs of happy slaves, heedless of the harvests their labor yields; those flowery dells and fruitful vales cheerful as wedding-bells, till our inebriate distress marred all that far more than earthly loveliness into a wilderness.

And then came the medical profession, a ghastly conglomeration, of sleek nourishment and gaunt famishing hunger, interspersed, ever and anon, with the duplicates of Romeo's apothecary and their stale herbs and rotten roots, and fermented tinctures—a crushing rebuke to the ignorance that comprised the stock and store of my own endowment.

Behind all this came a great brilliant light, in the center of whose radiant circle stood out in dazzling letters—"SEEK ME!"

I seemed, thus, to realize that there was medical light to be found, but where or how, there was no guiding hint.

I started up. Evidently I had been half asleep, fugitively dreaming. Yet, I felt that I must on. I was inauspiciously embarked, with no headland beacon on either hand, with no alternative but to continue the voyage.

And I hastened away, to mingle in the horrors of a smallpox epidemic, then raging and rapidly spreading near and around.

(*To be continued.*)

A WAYSIDE REVERIE

By RICHARD WIGHTMAN

THE past? Well, what of the past, I say
Poor outworn thing; can I mend it, pray?
Do tears avail for the misspent days?
Will pining straighten the crooked ways?
Must yesterday's heartbreak last for ay,
And yesterday's mist hide the sun today?
Nay, life is life, and the farer's toll
Is a hopeful heart as the hours unroll.
The path ascends; each winding rood
Blooms at the touch of a blithesome mood.
I will hold that the best is a bit beyond
And drink a toast from the lily's frond—
A toast in dew to the day that's done,
And one to the better day begun.

Pacifying Nerves by Means of Pressure*

By Edwin F. Bowers, M. D., New York City

EDITORIAL NOTE.—Doctor Bowers has given us a remarkable story, which we hope will be read carefully by all our "family," then the expedients suggested given a faithful trial, and reported upon through these columns. Is there anything in the idea? We want to know. Who can help us answer this question?

ALWAYS humanity has demanded to know "How?" and "Why?"; this is one reason why we of today know more than our grandfathers did. When that ancient Greek philosopher said, "Know thyself!" he was applying the "How?" and "Why?" to one of the most mysterious things that baffled him, namely, the complex human body, and of all the mysteries still confronting us the question of the nerve reflexes is one of the most troublesome. Let me illustrate:

For ages we have ground and gritted our teeth during paroxysms of pain. The action is so universal that, knowing the peculiarities of any given individual, we can tell just how much it hurts him by the amount of noise he makes gritting his teeth.

Again, when we bump our shins against a rocking-chair that, with the perversity of all inanimate objects, takes up a point of vantage directly in our path, immediately and without waiting to be told we clasp the offended shin with more than brotherly ardor. Experience has taught us that by this act of intimate kindness pain is relieved.

And in those dear dead days—now thankfully beyond recall—before the blessed era of nitrous oxide and local anesthetics, when the muscular and unfeeling dentist leaned toward the door, with our pet tooth firm in the embrace of his shiny forceps, we helped him to our utmost by clutching the arms of his chair with a viselike grip. It mattered not that this maneuver had no more connection with the mechanics of tooth extraction than the effulgent rays of the moon have on the pumpkin crop. We saw our duty—and we did it, of our own free will and volition.

When fury and anger sweep us in their red flame and the gentle familiar aspects of nature take on the hue of blood, we clinch our fists until the nails are driven deep into the flesh.

And in the first shock of that agony of bereavement that comes to all, because it is the way of all flesh, or during the cruelly dragging hours when we are adjusting ourselves to living with our very hearts torn asunder, we clasp our hands in veritable frenzy. When our friends come to strengthen us with their warm sympathy, they do not, if they are wise, burden us with mere words of condolence. They take our hands and press them, silently and warmly; and they let the unspoken word speak for their hearts.

And during those bleak hours, when we say, with the psalmist, "Would God it were morning"; and, when it was morning, "Would God it were evening," unconsciously we make our petition with fingers interlaced or pressed tightly together.

We do these things, because they are natural and, apparently, inevitable. We do them automatically and without rightly knowing why. But now we do know why we act thus.

It's the Push-buttons—That's Why

We now are absolutely certain that we grind our teeth during the passage of a gallstone, or clutch the arm of a chair when an abscess is lanced, or tightly interlace our fingers under stress of powerful emotion, because these actions reflexly influence the severity of the pain or modify the emotional strain. And the reason why they do so is, because the grinding-pressure of the teeth or the clinching of the fingers tends to block the transmission of pain or emotional impulses. In other words, they produce a form of analgesia somewhat similar to that which follows the injection of water or some anesthetic solution into the course of a nerve.

For, in addition to the approximately three hundred "push-buttons" located in the mouth, nose, pharynx, epipharynx, tonsils, palate, fauces, and tongue, and originally charted by Dr. Wm. Fitzgerald of Hartford, Connecticut, it has been proven that the entire body is symmetrically studded with similar nerve-reflex "push-buttons." Doctor Fitzgerald, and the physicians, surgeons, and dentists who have been enthusiastically collaborating with him, now reach the broad, general conclusion that the human body is divided into ten zones, five on either side of a line drawn up the middle of the body.

It is an established fact that reflex analgesic and therapeutic results are obtained by pressure exerted upon any of these zones over any bony eminence and that this affects any pathologic condition in these particular zones, although not to the same extent as

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will pressure exerted upon the little "switches" located inside the mouth and nose and on the tongue.

The Pressure Zones, and Their Extension

The first, second, third, fourth and fifth zones begin in the toes, run up over the head and end in the fingers; or, *vice versa*.

The experimenters assert (and I have so demonstrated to my own satisfaction) that pain and many abnormal conditions in any part of the first zone may be treated and overcome, temporarily at least, by applying pressure over the first joint of the great toe or the corresponding joint of the thumb. Should the pressure be limited to or be most marked upon the upper surface of the great toe, the anesthetic or analgesic effect will extend up the anterior aspect of the body and to that point on the top of the skull known technically as the frontoparietal suture—which, by the way, seems to be the dividing line between the posterior and the lateral zones. The effect will also extend laterally over the chest and to and down the front surfaces of the first zone of the arm and thumb.

Should the pressure be exerted upon the under surface of the great toe, the effect will extend along the first zone in the sole of the foot, and continue along that zone up the back of the leg, thigh, body and the top of the head, and also toward the shoulder and then down the posterior surface of the first zone of the arm and thumb. Pressure upon the end of the great toe or thumb will affect the entire first zone, front and back. Pressure upon the lateral surfaces of the fingers or toes will affect the lateral boundaries of the zones governed by these particular fingers or toes. In order to insure success with these various pressures, it is essential that these facts be kept firmly in mind.

When I was dictating the rough draft of this article, my stenographer complained of rheumatic pain located in the outer aspect of the right ankle. I grasped the second joint of his right little finger and pressed firmly for a few minutes on the upper and under side of the joint. He volunteered the information that, though the pain was somewhat relieved, it still persisted. I then recalled that this pain was localized on the outside of the ankle, instead of on the upper surface. So, changing my grip to the side of the joint—the lateral aspects of the finger—I repeated the procedure, and in less than two minutes he expressed himself as being perfectly free from pain; and he has remained so.

A limited degree of anesthesia may be established by applying pressure over any bony surface; also often a mere momentary contact with a glowing sharp-pointed galvanocautery needle or even with the thumb-nail or finger-nail will produce the same result.

It may once more be mentioned that pain or any abnormal conditions anywhere in the first zone of the body may be overcome more quickly and effectually by pressure with a probe or with cautery contacts at certain points throughout the first zone in the mouth, pharynx, epipharynx, nose or tongue; still, the finger and toe pressures, if properly applied, quite generally may be relied upon, and are especially adapted for "home treatment." Whatever applies to one zone is equally applicable to all the other zones.

As to the duration of the pressure, the average time required is from one-half minute to four minutes, depending upon the susceptibility of the patient.

A Few Practical Hints for Dentists' Work

Let me make a few practical applications. If, for example, one has pain in the first zone on the left side of the jaw—either upper or lower—it can be overcome, temporarily at any rate, by means of firm pressure upon the thumb—pressure just short of pain. The patient very soon will declare that the thumb feels numb, and he seems able to trace the progress of a wave of numbness extending gradually upward through the arm and over the body in that particular zone. When this numbness passes beyond the locality where the pain for which the anesthesia is being induced exists, the suffering usually ceases. When this occurs, dental work or minor surgery may be attempted, the nerves being quite desensitized. The patient may exert this pressure himself, but the operator or his assistant will do it more effectually and expeditiously.

For the benefit of dentists who may wish to prepare cavities in sensitive teeth or do some of the necessarily painful scaling of tartar and other deposits in pyorrhea, as also for the particular benefit of the millions of their patients throughout the country, I will say that pressure (applied by an assistant) exerted over the first joint of the thumb, will mitigate or quite control the pain in the incisors and the cuspid tooth of the side corresponding to the digit being squeezed. Incidentally, it is best completely to cover the joint, using thumbs and fingers of both hands for this purpose.

Similar pressure exerted over the second joint of the index-finger will control pain in the respective bicuspid tooth. The middle finger is reflexly related to the two molars, but sometimes the third finger must also be employed for affecting that region.

In other words, pressure upon the thumb, index-finger, and middle fingers of either hand will control, correspondingly, pain in the incisors and cuspids, cuspids and bicuspids, and the two molars on either side of the median line, provided that there is no great inflammation or an abscess in the vicinity of the respective teeth.

Occasionally the "control" overlaps, in which case it is necessary to manipulate also the finger next to the zone-finger; while, in order to get the best results in the case of wisdom-teeth, it is advisable to act upon both the third and the little finger.

Some Other Pressure-points

A very successful method practiced by some experts—particularly when extracting must be done—is, to grasp the offending tooth as near to the apex of the root as is practicable, and with the thumb and finger make firm pressure for three or four minutes, by the watch. This usually produces a degree of anesthesia sufficient for extraction purposes. This anesthesia usually lasts about one-half hour; while, of course, the pressure may, if necessary, be again applied at any time.

Other dentists and oral surgeons get excellent results by pressing on the "heel of the jaw," or, more properly, the tuberosity of the superior maxilla. This is capable of producing a very complete and lasting anesthesia of the entire upper jaw on the side influenced, and permits the painless extraction of teeth located in the immediate neighborhood.

In the case of the lower front teeth, it has been found that to press or hold the inferior dental nerve, where it emerges from the inside of the ramus of the lower jaw, gives good anesthesia. Also pressure with the finger upon the inferior dental nerve, where it issues from the inferior dental foramen, will usually anesthetize that half of the jaw. Many operators, the better to "focus," prefer to use the blunt end of an instrument (the handle of an excavator is excellent) for this purpose.

The proper application of these principles cannot fail to become of immense value to dentists and oral surgeons in their practice. In relieving toothache and neuralgia, in removing deposits, in extracting teeth, in fact, in all painful operations that dentists are called upon to perform, this simple and readily learned pressure technic should prove invaluable, as many are finding out every day.

How Dentists Profit

And, further, the practice of these principles will, inevitably, encourage public interest in dentistry, and will materially diminish the sum total of pain and suffering that humanity, throughout this vale of fears is called upon to endure. Indeed, it is a common and certainly highly gratifying experience among those dentists now employing pressure-analgesia to have especially sensitive patients—those upon whom, because of past exhausting and nerve-racking experiences, they have always dreaded working—exclaim with gratification: "Well, doctor, if you hurt me no more than you did today, I shall never again fear to come to you."

Mothers will find that in this inhibition-analgesia they have a safe and certain means of relieving themselves and their children of an immense amount of pain and discomfort. For, while, of course, they cannot hope to possess technical knowledge that will enable them to find and exert pressure upon the nerves themselves, it is a comparatively simple matter for them to grasp the roots of an aching tooth between thumb and finger and thus relieve the pain—at least until they can take little Alfred or Alice to the dentist.

However, in cases of toothache in which the preceding method may not seem feasible, people, by remembering the fingers that correspond to the particular zone which it is desired to influence, can do much to relieve distressing conditions in that zone until such time as the doctor or dentist can be visited. For example: At a dinner-party the other night, one of the ladies complained of a severe pain in her right upper first molar. I told her to squeeze firmly the joint of her second finger—advice which she considered a rather illtimed and pointless joke. Insisting that I was serious and helpfully disposed, she obeyed instructions, and in a very few minutes beamed complete relief from her dental anguish.

Suggestion Is Not an Element Involved

Belief in the efficacy of the treatment is not essential, and "suggestion" does not explain the reactions. For, if the pressure is not made in the proper zone, in the proper way, and for a sufficient length of time, the results will inevitably be negative.

In fact, anticipating such a contention, Doctor Fitzgerald and his fellow experimenters purposely, in hundreds of instances, refrained from suggesting that they even were attempting the relief of pain, the first and only intimation as to what was being accomplished coming from the patients themselves.

In neuralgias and other painful conditions of long standing—where there are no decayed teeth or other dental causes for pain—many permanent cures have been effected by means of pressure-treatment. Almost it would seem in these instances that whatever tended to reduce the pain also helped to remove its cause, no matter how remote.

Many dentists secure a very satisfactory degree of analgesia—sufficient for excavating or treatment—by firmly compressing the patient's lip or cheek immediately over the tooth that is to be worked upon. But, as a rule, for extracting teeth, they prefer pressure over the roots or directly upon the various branches of the dental nerves.

The Dentist's and Doctor's Spheres Overlapping

One of the most significant facts in connection with pressure-therapy—or zone-therapy, as now it frequently is called—is the intimate relation subsisting between morbid dental conditions and pain or even pathological changes in virtually every part of the body. It has been demonstrated beyond a shadow of a doubt that points, or foci, of infection within the mouth or in the teeth frequently manifest disturbances even in most remote parts of the body.

This is one reason why many physicians and surgeons employing this method make it a routine practice to send every patient who has any dental disease, or in whom it is merely suspected, to a competent dentist, for a thorough overhauling. Doctor Fitzgerald does not profess to explain this unquestioned relationship, but he contends that in every case of goiter ever treated by him (and he has seen hundreds) invariably there were conditions present calling for dental attention.

Another reason for striving to keep all our original teeth in the places that nature intended is, to preserve the continuity (if it may be so termed) of our various nerve-zones. Sound, healthy teeth and roots in their normal occlusion seem to assist in normal functioning of the entire zone-chain of which they are an important link.

Congestions, headaches, neuralgic conditions affecting the nerves of the head or the ears, even partial deafness have been materially improved and many times completely cured by the application of a galvanic cautery around the necks of the teeth, by pressure on the teeth themselves in the zone affected, or even by having the patient "grind" the particular teeth that are nervously related to those areas which it is attempted favorably to influence.

In several instances, chronic frontal headaches in children have been cured by correcting faulty occlusion of the front teeth. When after several months' treatment the teeth were restored to their normal alignment and continuity of the nerve-zone was reestablished, the headaches ceased to occur, and there has been no return of them.

Diagnostic Value of Pressure-Therapy

Reflex relations are even more pronounced where there are abnormalities in the nose, epipharynx, pharynx, throat or other parts of the body, and frequently manifest themselves in lesions or various distressing symptoms, always, however, within the zone occupied by the original cause of the trouble. Thus, for instance, hay-fever is a disease exhibiting more or less of constitutional symptoms. Yet, Doctor Fitzgerald, in an experience with many hundreds of cases, contends that he never has seen a hayfeverite with an absolutely normal nose. Invariably there were bony spurs, enlarged turbinates, deviated and twisted septums, mechanical occlusions of some kind, or else an irritated, inflamed mucous-membrane lining; and these seemed to stand *in loco parentis* to the hay-fever.

As a matter of fact, as a means of diagnosis, those familiar with zone-therapy consider it as almost invaluable. If a patient complains of pain, the origin of which seems obscure, these physicians assure themselves first that it does not arise from eye trouble. If then the nose and throat are clear and the dental expert also reports that the patient's teeth are sound, these doctors know that they must look elsewhere through the zone affected for the source of trouble.

Sometimes most serious unsuspected conditions are thus uncovered, as happened with a woman whom Doctor Fitzgerald recently treated for goiter. (This condition, it may be remarked in passing, is almost invariably cured by pressure-therapy.) In the past fifteen months, Doctor Fitzgerald has treated 21 cases, many of which were of the exophthalmic variety, where there were the protruding eyeballs, the unsightly enlargements of the thyroid gland, and all the other usual

symptoms. Twelve of these have been discharged as cured, and are on the high road to recovery—having had no other treatment except pressure-therapy. However, one patient proved intractable. Finally, she was sent to a gynecologist, where examination disclosed the presence of a large fibroid tumor, located, of course, in the same zone as the goiter. An operation was performed, and now, without doubt, a rapid improvement in the goiter can confidently be expected.

And That's Why Teddy Clicks His Molars

And, so, we can now understand why we grind our teeth. It is because this action causes a relief of nerve tension and a diminution of pain in all the zones of the body connected by those invisible and as yet undiscovered nervous wires strung through the telegraph-poles of the teeth.

When we grab our bruised shins, we check the transmission of pain of the irritated nerve-trunk lines of that zone. When we grasp the side-arms of the dental chair and hang on like grim death, we unconsciously are going through motions that, if continued long enough, would have made our ordeal comparatively painless. The only fault in our preparation for it was, that we should have started our pressure-grip three or four minutes earlier. Still, our intentions were good.

When automatically we clench our fists in furious anger, we are relieving terrific nervous excitation, and thereby perhaps preventing the bursting of a blood-vessel. When we clasp the hands of one sorely stricken and in the throes of despair, we are, in addition to supplying him with comforting magnetism and psychical solace, producing a distinctly analgesic and quieting effect upon his entire nervous system.

And when we clasp our hands or press the fingers tightly together in supplication we are ministering to the overwrought nerves and thereby perhaps bringing ourselves into closer harmony with the great Cosmic Force that envelops us in a mantle of kindness and love.

Intravenous Injections of Salicylic Acid and Guaiacol

A Comment and Criticism

By H. L. Henderson, M. D., Astoria, Oregon

IN THE August issue of Clinical Medicine, page 720, appeared an excellent paper from the pen of Mr. Carl Nielsen, together with commentaries on the subject by the editor; those comments breathing a spirit of genuine altruism, professional liberality, and caution. Inasmuch as I was honored by my name being mentioned as one of the investigators in this clinical field, I take it that I shall not be called overpresumptious if I take up the subject and give another view and consideration of the matter than that mentioned by either the editor or the learned author of the article in question. I will premise that I do not do this with any spirit of controversy or criticism of anyone or his opinions, nor do I presume to speak for any other investigator than myself.

In the limited line of investigation along which I am working, many new and unorthodox conclusions have been forced upon me and results have been obtained that do not coincide with socalled scientific and popular beliefs and traditions that are as old and time-honored as the science of medicine itself. We all must admit that medical science, as such, has made many and rapid strides forward during the last few decades; many of our former beliefs have been relegated to the domain of fallacies and superstitions. And so it may be with regard to intravenous medication and its possibilities. In it, we may learn from clinical experience that "there are more things in heaven and earth than are dreamt of in philosophy."

I have been patiently delving and endeavoring to find a really successful treatment for tuberculosis ever since my second year as a medical student, now nearly thirty-five years ago; and all these years I have closely studied the numerous "treatments" that have been announced from time to time. About eleven years ago, I began investigating the action of salicylic acid, and later took up its combination with guaiacol. The disappointments, the intricate problems, the surprises, the victories gained would not be of interest to him who has never trod the rough and rugged road of experimental therapeutics, tried and tested by the fires of clin-

ical results. I mention these difficulties met and overcome, not as a boast, but simply to indicate that, while having traveled that rough and rugged road, I should, indeed, be a monumental dullard had I not picked up at least some few things that can be acquired by personal experience and observation alone.

It would be impossible to express too high an admiration of the chemical acumen displayed by Mr. Nielsen in the formulas, as outlined by him, for the formation of the solution of salicylic acid and of guaiacol, as viewed from the standpoint of the laboratory-clinician. There can not possibly be any doubts in the mind of any accomplished chemist but that a perfect solution would be formed by following that formula. The laboratory verification of the employment of his solution in his experiments on dogs and rabbits, as also the record of the phenomena manifested by his subjects, are all clear and explicit.

How the Solution Acts Upon Consumptives

However, I have administered many, many hundreds of injections of the solution, as I make it, to human beings, even to the "half dead" consumptive, in doses ranging from 80 to 140 grains of the acid and from 40 to 60 minims of the guaiacol, without having observed any of the alarming phenomena that Mr. Nielsen witnessed in his animal-experiments. It has been a long time since I gave less than 70 grains of the acid and the proportionate amount of the guaiacol, even to a child of ten years of age.

A comparison of these records must force one to the conclusion that either the solution employed by Mr. Nielsen is not the same in materials and formula as mine, or else the results of the physiological action of the substances composing the solution is vastly different upon the animal than upon the human being. Personally, I am very certain that the answer to the first hypothesis is positive, and am very strongly inclined to believe that the answer to the second is also positive.

In preparing the solution according to the formula published by him, Mr. Nielsen, like many others, has overlooked the germ in the seed, in his search for the expected complex. Its real simplicity and primary nature has been obscured in the mist of an expected complication that does not exist.

It is seldom that I have seen a more direct proving of the oft-asserted variation or lack of agreement between animal-experiment and clinical symptoms than is here exhibited. Several well-informed physicians have observed me in my work of administering the solution and will readily verify my statements as to immediate results being devoid of alarming symptoms. On the contrary, my patients often express a relief from oppressive symptoms even before the completion of the injection, and they all are ready to leave the operating-table and walk to their rooms within ten minutes from the completion of the administration. The hectic flush of toxic febrile action disappears in a very few hours, cough and expectoration decrease rapidly, and often within three hours after the administration of the injection the patient is simply "howling" for food. I have had a few patients admit a slight dizziness after their attention was aroused by a question; I have had a few complain of nausea, provided there was food in the stomach at the time of the administration or if the liver had been working short hours for some time previous to beginning treatment. In all, the pulse becomes full and round, with abnormal frequency; the blood pressure rises perhaps from 10 to 25 points, and a coincident blood-count will soon manifest an increased corpuscular activity and proliferation, and often the patient begins at once to gain weight, at about the rate of 5 pounds per week, up to his original normal weight.

Stop and ask yourself, Do these facts coincide with accepted orthodox science? Not by any means! Take down your best work dealing with the physiological action of medicines, and you will at once see that many of the statements made by the author were not founded on pure human clinical manifestation. Is not this a sufficient cause for professional cynicism and heresy? In the making of the solution, as I use it, I employ only ingredients that have been made by a manufacturer whose name is a worldwide guarantee of absolute purity. I always use the wintergreen salicylic acid. This may account for some discrepancies.

The Formula Will Not Be Divulged

In the comments of the editor upon the paper by Mr. Nielsen, he made implication that the formulas used by men engaged in this work should at once be published broadcast to the world. So I myself formerly thought and fully expected to act thus. I have no doubt that the readers of these lines are expecting soon to reach the formula which I, as one worker along these lines, employ . In that expectation he will be disappointed; but, if he will follow to the end,

I will try to make plain the reason for my reticence.

When I first published a report of the work that I am doing in the treatment of tuberculosis, wherein the solution of salicylic acid and of guaiacol forms an important spoke in the vast wheel of the therapy of the treatment of that dread disease, and by which I am enabled to bring about a complete and permanent cure of about 90 percent of all patients who are ambulant and whose cases are uncomplicated at the time of beginning treatment, the number of letters that came to me asking for details was simply astounding. I was completely "snowed under." When I finally sorted out and replied to these letters, and after I had fully analyzed the spirit and the intent of the writers of them, I was still more thoroughly astounded. Hundreds of these letters breathed a spirit of medical wisdom and comprehension that was truly refreshing. Others had the word "mercenary" stamped so plainly across their face that it was difficult to read any other portion of them. Still others had "personal ambition" as a label so plainly written that anyone could read it. Others, again, showed so plainly that the writer had no comprehension whatever of the fundamental truths underlying the science of medicine, no knowledge of chemical physiology, physiological therapeutics, human pathology, and so on, that the perusal of them became absolutely painful.

I will transcribe one of these letters, the original of which is in my possession, and, when I tell you that the writer of it is an American-born man, a graduate of a reputable medical college, and is registered in one of the states that boasts of the high requirements for admission to practice within its borders, I believe that you will at once agree with me that it would be a dangerous thing to place in the hands of such men an engine that is so powerful, so capable of doing good to suffering humanity, but, also, perhaps, as well capable of doing harm in the hands of the man who is not "duly and truly prepared" for the work. This letter was written with a typewriter, so that there can be no mistake as to its literal construction and phraseology. I trust that the "printer" will set it just as it is written, punctuation and all.

H L Henderson M D
Astoria Ore

My dear Doctor

I notice your, Artical, in, the ——, medical, jurnal, on, tuberculosis, i have, A case now of tuberculosis of the boules I should like to make an effort and it is A well defined one would it be posaible for you too send too me me enouff medisine, for this caise, As i mite not get the meds the compound, just, right as I as your self, believe you have made a life, saving, discoverey And i will try it shure if I can get the, material, frum you, alreadey, Proportioned It will suit me So if yoy can or can not compley, with the above I for one doo congratulate you and wishyyou success.

As ever respettfulley.

I sent copies of this letter, together with several others of like character (originals still in my possession), to many of the leading men in the medical profession in as many of the medical centers of this country and asked them for their candid advice under the circumstances. Each of them answered my inquiry at considerable length, all advising me that it is a duty that I owe to suffering humanity, that I do all in my power to keep this method from falling into the hands of the incompetent and the mercenary. They pointed out the fact that in the hands of an incompetent person this method of treatment would not and could not receive justice; while, in the hands of the mercenary adventurer, it would be but a short time until he, being more ambitious for fame and money than for wisdom, would bring about the death of one or more trusting victims—and then the blame would immediately reflect upon me and the method, although the method might be ever so efficient in competent and careful hands. The condemnation of the medicinal combination and of the method would immediately follow—although not because of any shortcoming on the part of the medicines or of the plan of treatment generally—and it would be branded as a fake and a fraud and be dumped on the shores of the medical ocean, soon to be forgotten among the many wrecks that now mar its beauty. The incompetent man can not possibly bring the degree of success that can be attained by the one more perfectly equipped, so that from that source the method would lose favor.

In a Quandary as to the Proper Course

Such was the advice that I received from men whose ability and professional and personal integrity are above question. I recognize the fact fully that it is a physical impossibility for me, and even for thousands of men, to give this treatment, that promises so much, to the almost countless sufferers from the ravages of the "great white plague." But, what shall be done? Must the method be sacrificed upon the altar of incompetency and egotism combined with mercenary motives? These are questions that need answering by someone who is so prolific with sug-

gestions that the minor details of the work should be spread broadcast. I had one letter from a barber who assured me that, if I would inform him of the plan of treatment that I employed, he would give up his trade and at once take it up and go about curing sick people. I had one letter from a poor widow, who told me a pitiful story of the hard struggle that she had had to raise and educate her family, and she thought that, inasmuch as she was known to be "handy" around the sick, if I would tell "how to mix the medicine," she could cure "lots of cases" in her neighborhood.

Should Doctors and Scientists Keep Their Discoveries Secret?

Now, after knowing these things, the question arises in my mind, Was the publication of the alleged formula in the recent paper by Mr. Nielsen timely, or is it well advised? Now, after its publication, if an incompetent takes it up and begins to administer the solution as he outlines it and trouble and even death follows, the blame falls on the shoulders of Mr. Nielsen, not on the incompetent; for, there is the printed evidence that the compound as used has been published in a reputable medical journal and, consequently, has the stamp of authority.

That there are incompetents and quacks in the medical profession, no sensible man will dispute. There are also innumerable noble, self-sacrificing, and competent men in our profession, and each of them will, if he so desires, take up this work and use it for the benefit of suffering humanity; and he will not write to me or any other man and ask for details as to the chemical combination of the medicines; for, if he possesses competency, then it naturally follows that he knows full well how to compound the medicines.

In many of the letters that came to my desk, I found that a large percentage of the writers desired to take up the work of treating tuberculosis as purely a "side line" to the general practice of medicine, not seemingly comprehending the fact that the man who successfully treats tuberculosis will not have time nor opportunity for any other work in general practice.

There is not one single atom of secrecy connected with this work. Any man who possesses the requisite amount of primary medical knowledge, together with the amount or degree of industry that should characterize every practicing physician, can soon systematize this subject, and as much success will crown his efforts as that of any other man engaged in the same line of work.

In previously published papers from myself (and I have read like papers from other investigators), the remedies are named and the doses are given. So far as I am informed, "there is no royal road to knowledge." Everybody may attain that goal on any particular point, if he will get in and work. It is my sincere desire that competent men at once take up this work and assist me in turning aside the "grim messenger" from the homes of the many thousands of people at whose door he is even now seeking admittance. I have nothing to sell except my services to those whom I treat. Let others take up the work with only the object in view of assisting suffering humanity, and I will help them all as far as lies within my power.

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[While we are pleased to have an opportunity to present the views of Doctor Henderson, we cannot let his defense of secrecy go unchallenged. His argument is not valid, although it is ably presented—so ably, that we fear some of our readers may be misled thereby.

It may be admitted that there are ignorant and unskilful men in our profession, who might harm their patients with Doctor Henderson's remedy; but it must be remembered that men of this character are dangerous, whatever they employ, as dangerous now with morphine, arsenic or chloroform, as they could possibly be with salicylic acid and guaiacol. The majority of physicians, however, are competent and earnest, and any man who withholds from them the means of curing people who are capable of cure takes upon himself a very serious responsibility. It is not for the doctor to say that someone might use his remedy wrong when there are thousands of physicians capable of using it right, and even of improving upon his methods and thereby increasing its value.

The profession of medicine prides itself upon its hatred for the secret and mysterious. It is because the accomplishments of each man are open to every other man that we keep on progressing. The surest way to kill medicine is to reduce its devotees to the level suggested by Doctor Henderson. What would have been the effect upon the profession, for instance, if Ehrlich had put salvarsan on the market as a secret nostrum; if Wright had patented his opsonic theory and permitted the use of bacterins only to his licensees; if Rogers had offered emetine to

the public in "Rogers' Dysentery Cure"; and if Barrett had refused to tell the dental profession how he was curing pyorrhea, and had begun the sale of "county rights"?

As Doctor Williams says at the beginning of his article on Nephritis, in this issue:

> "The master key to the door of Hope
> May be held by you or me,
> But pray what use is this master key
> If withheld by you or me?"

If Doctor Henderson really has something useful for the treatment of tuberculosis, it can stand the light of day. Improper use will not kill, criticism will bring it support as well as condemnation, and discussion and the broadening, enlightening experience of many men will help to place it on a firm foundation.

We hope that Doctor Henderson will come out into the open. He is making a mistake. A further discussion of the salicylic-acid-guaiacol treatment will be found in an article by Doctor Fowler in the Miscellaneous Department, this issue.—ED.]

The Medicine of Tomorrow*

By SIMON J. YOUNG, M. D., Valparaiso, Indiana

IT REQUIRES no gift of prophecy to point out some of the needs which exist in medical practice, and which must be supplied in some degree if the medical profession is to keep step with other agencies looking toward a higher and more efficient civilization.

Individual effort in medicine has reached a high degree of skill; knowledge has advanced at a remarkable pace; from a maze of superstition and dogma, our profession has been extricated and has walked out into the sun, where the white light of science is brought to bear upon it, examining, testing, proving everything.

And, yet, every thinking practitioner feels that, somehow, he is handicapped in his efforts to utilize in a practical way the knowledge which he possesses. He tries to be thorough, to give his best thought and talent to every patient, but altogether too often something perforce is left undone. Time and again, as he plans and recommends certain procedures, he is baffled; some difficulty arises, and he is obliged to compromise with his ideals; he gropes in the dark and guesses, where he might walk in the light and know, if only he could have his way with the patient; he knows what he ought to do, but is unable to do it. Why is this so?

Reasons for Unsatisfactory Services

As I view it, the difficulty lies in two directions.

In the first place, our system of medical practice is wrong. This system is competitive; it ought to be cooperative. It is extravagant, unscientific, wasteful. Our ruling fees are not commensurate with the service rendered. To make a diagnosis, requires expensive equipment and cooperative effort. As individuals, we cannot afford to provide the needful apparatus, and, as general practitioners, we could not make skilful use of them if we had them.

Furthermore, competition prevents specialization, except in cities. There can be no specialization, in the proper sense, without cooperation among practitioners. The professional scramble for bread-and-butter patients not only arouses envy, but retards individual growth. It limits our service largely to the individual. Medicine today has reached such proportions that no one man, however learned, is competent to make a diagnosis in every case—much less, to treat efficiently.

The age of individualism in medicine, as in all human activity, is passing. This is a time of specialization and of cooperation between specialists, if they would achieve efficiency. The very magnitude of the task demands it.

The other difficulty confronting us comes from our patients. Men and women gamble with fate, and they trust to gamblers' luck that sickness will not overtake them. Then, when sickness does come, they are neither prepared for it nor able to pay the doctor. They even do not comprehend what is implied by competent medical service. The people's idea of medical treatment is, to "take something"; ignorance and superstition still are dominant with the laity, and for this we physicians are largely to blame.

Professional service, as rendered today, is a personal service; hence, quite naturally, each physician encourages among his patients the belief that in his person is concentrated all wisdom, that HE is the alpha and omega of scientific medical information. Furthermore,

*Read before the Laporte County (Indiana) Medical Society, April 9, 1915.

being dependent upon his patients individually for his livelihood, the temptation ever is strong to appease their desire for medicine. Hygiene, right living, diet, exercise, these are all right in their way; but the patient will say: "Doctor, aren't you going to give me something to cure me?" "Certainly, certainly; you will reply, I am going to give you some medicine, and you must take it exactly as I direct. The vicious circle is complete.

And thus it is today, in some degree, with every one of us. And, let me repeat, it is so because we are competing with each other for a service that it is not possible for us to render as individuals—a needed service that we can not render without intelligent cooperation. It is so because our patients take no thought for the morrow and when confronted by illness try to wheedle the doctor into "giving them something," irrespective of the kind of treatment the circumstances demand.

These, I am convinced, are the fundamental obstacles that stand in the way today—thwarting our efforts (honest and sincere) to render to our patients thorough, accurate, scientific service, such as we know they ought to have.

Of course, we are doing this in a few instances, but I am speaking by and large, and I know—as you know—that we do not, even in a respectable minority of our cases, "deliver the goods."

The medicine of today is capable of rendering a service tenfold greater than it does, if these obstacles were removed.

Cooperation Must Solve the Problem

The medicine of tomorrow will find a way, and that way, I am sure, lies in the direction of cooperation. The principle of cooperation applies to the social status of the patient too, as well as the work of the medical profession. We must cooperate in order to be able to render perfect service; they must, by cooperative effort, be prepared to receive medical aid and pay for it. The one is as necessary as the other.

What Our Patients Get for Their Money

It is our duty, as physicians, to study this question. Let us, for the time being, lay aside prejudice and consider the sick people who are buying medical service, and make clear what they are getting for their money.

Under the present system, some of our patients pay too much for medical aid, many pay nothing, while nearly all obtain too little in the way of proper, needed treatment.

These conditions are familiar to all of us. The rich can afford the best as to medical service; the poor today obtain it free, as a result of charity—and charity, nine times out of ten, is an economic folly. The great middle class of Americans—those of the laboring class and the people in moderate circumstances, as well as most people in rural communities—are outside of the pale of scientific medicine. These people, the bulk of the nation, do not want to be classed as charity-patients, yet their means will not permit them to employ a group of specialists. Indeed, they look with suspicion upon a physician who tries to send them in turn to the laboratory-worker, the roentgenologist, the oculist, aurist-rhinologist, the neurologist, the urologist, the gynecologist, the surgeon; they come to regard the separate fees of specialists in the light of duplicate fees and rightly conclude that the cost is out of proportion to the service rendered. In fact, it often is prohibitive.

However much these sick people may need this special service (and we know full well that they do need it), they cannot have it. Many times such aid is not conveniently attainable, but many more times they are unable to pay for it. And yet, these people are the bone and sinew of the nation. Why should the best medical service be denied to these men and women, and their children—these breadwinners of the land—when the best is available to the rich and to the very poor.

The explanation of this unsatisfactory situation is, that we are, as yet, only a half-civilized people. We do not see that our present complex form of society is gradually submerging the individual. In order to find a remedy, we must soon come to realize that no man can live unto himself alone, and that each man is his brother's keeper.

The Practice of Medicine Must Be Socialized

To me it is obvious that this deplorable situation can be remedied only by the proper socialization of medicine. I am aware that the mere mention of contract-practice (which is involved in socialized medicine) raises a storm of dissent whenever it is referred to. Notwithstanding this, I am ready to go upon record in favor of some plan, by whatever name it may be called, that will enlarge the physician's sphere of usefulness.

Firm in the belief that state medicine is the only avenue through which this service may be adequately rendered, I proclaim it as the *medicine of tomorrow.*

Indeed, in some respects it already is the medicine of today. In principle, it is recognized in the United States Public Health Service and in the various activities relating to the communal health of the several states. The workmen's compensation acts, widows' pensions, and similar provisions all proclaim, in a limited way, the idea which I have in mind.

Even now shrewd business men are reading the signs of the times, and, so, we have accident-insurance and health-insurance companies by the hundreds; lodge-insurance also is growing in popularity; the labor unions in some localities are instituting accident and health insurance of one type or another; the railroad corporations long have maintained relief-associations designed to provide for accidents to their employees. It is a fact that corporations are beginning to realize that efficiency is largely a question of health, hence, some are providing medical inspection and medical service for their workmen.

Everywhere we see evidence that groups of citizens are awakening to the need of cooperative effort with a view to protecting themselves against the pauperizing influence of sickness. And why not? For many years we have protected ourselves against loss by fire; more recently life-insurance has protected our families against the consequences of death—and few men are so bold today as to deny that life-insurance is a great social blessing.

Insurance Against Sickness: Why Not?

Then, why not insurance against sickness? Some plan (perhaps many) is sure to be adopted under which large numbers of people will band themselves together and buy medical service on a per-capita basis, even as they buy protection today against loss by fire, and by death, and by accident.

Sickness is accidental, and, like other accidents, it ought to be anticipated by some cooperative saving-fund out of which to pay for it.

Many private schemes will arise in the next decade, purporting to furnish such service; but, most of these will be open to criticisms—they will be designed to enrich their organizers, and give as little as possible for the cost. It remains for us to watch all these new schemes carefully, not merely to condemn, but to study their weak points and then endeavor gradually to strengthen them.

It does no good to rail against lodge- and contract-practice. It is here. It is right in principle, and, if wrong in practice, let us seek to remedy the defects as they may appear.

I believe that, at some time, we shall have state medicine, all service paid for by taxation, even as we now have education and police protection at public expense. Before that time, however, our political machinery will have to be changed materially, and public ideals also must undergo an evolutionary change. Yet, I believe it is coming faster than most of us realize.

Mutual Insurance as a Transition Makeshift

Meantime, I think the best system to provide medical treatment for the man of moderate means is that of mutual insurance societies under state control. As to the details of such a system, I think we have sufficient data to guide us in making an effective start.

Health-Insurance Societies of Germany and Austria

The insurance societies of Germany and Austria have passed through the formative stage and are, today, in successful operation. True, there have been dissatisfactions and a year ago a strike even threatened on the part of the physicians, to carry out the service imposed. However, everything finally was adjusted to the satisfaction of both sides.

Until in recent years, the medical profession in Germany was not well organized. Insurance contracts were made with individuals, and pay consequently was small. Before the expiration of their contracts, the Doctors' Federation had grown sufficiently strong to formulate effective demands, and the results are apparent in the fact that only 150 physicians out of 32,000 in Germany could be induced to sign with the insurance companies, against the advice of the Leipsic league.

The terms of the final agreement involved the following features—contracts running for ten years:

1. The right of the profession to organize for the purpose of protecting itself and of regulating the conditions of service.
2. The free choice of doctor on the part of the patient whenever possible.
3. Arbitration courts composed of an equal number of members representing both sides, for the settlement of all controversies.

Twenty-two millions (22,000,000) of the German people were brought under the operation of the new agreement by compulsion, while many more are given an oppor-

tunity to take advantage of it, if they so desire. It is estimated that in some districts nearly 95 percent of the inhabitants will be affected. This virtually constitutes a state system of medical relief.

In the dual monarchy of Austria-Hungary, a system similar to the one obtaining in the German Empire is maintained.

The British Experiment with Socialized Medicine

England has recently adopted an insurance act which is the most sweeping the world has ever seen. "Besides medical attention, the act provides insurance against sickness and disability for all who have an income below a certain amount." At present about 14,000,000 people are beneficiaries under the law. It has been proposed that in the near future the act shall be made to apply to the dependents of the insured, so that no less than four-fifths of England's population will come under its provisions.

About 20,000 of the 22,500 physicians in England are now employed under this act, notwithstanding the bitter opposition at first offered by the British Medical Association. The futility of this opposition is evidenced, not only by the number of physicians who accepted service under it, but also by the fact that during the first year of its operation the incomes of these practitioners actually were augmented in sums varying from $750 to $2000.

The English law has not been entirely satisfactory in its operation; moreover, it obviously is impossible to please everyone with a law so comprehensive. On the whole, it has been a great boon to the people affected by it, and gradually the physicians are adjusting themselves to it, and find it profitable.

The need for cooperation, which I have pointed out, on the part of physicians, has not been fully met in the English system, inasmuch as no arrangement was made for the employment of specialists, and compensation for work is upon a basis of fees instead of yearly salaries. This need already is recognized by the people and, so, the latest budget carries an appropriation for the pay of specialists who may be called in consultation by any of the panel-practitioners. In a recent speech by Sir Clifford Allbutt, on the medicine of the future, reference was made to this provision, and the speaker declared that it would "lift English medicine to a level that it has never yet attained."

Agitation is going on now to place the panel-physicians upon full-time service at a yearly salary; and this, as usual, is being fought by the physicians. It is the only feasible plan, though, by which to obtain successful cooperation and true economy in service. It undoubtedly will be the next step in the development of the English system.

(*To be continued.*)

The Letters of Doctor Leonidas Playfair

Addressed to a Young Man Just Entering Practice

By A. H. P. Leuf, M. D., Philadelphia, Pennsylvania

MY DEAR FRIEND: Having secured your location, estimated the community in which you are going to begin your work, determined upon your general bearing, and having fixed upon your office-hours, besides deciding to carry your own medicines, it is important that you make up your mind what your regular charges are to be. In this matter, remember, you must be governed largely by the prevailing schedule of prices of those round-about you. Despite the many sentimental conceptions of our profession, it has its unquestionable business side; albeit, unfortunately, almost always neglected. The first thing a beginner becomes aware of is, that he is in competition with others—a competition with a vengeance; sharper, unfairer, and more unrelenting than obtains in ordinary business, and otherwise worse because covert and insidious.

Inasmuch as you, my young friend, aspire to take a high rank in your profession, you must be careful at the outset not to undervalue your own services by making ridiculously low charges, althogh you must have a care not to place these too high; for, your value will, as yet, be undetermined and it would be supererogation on your part to put a price upon your services as high as that commanded by the most desired physicians in your vicinity. Nevertheless, you should not condescend to compete with the ridiculous charge of 25 cents for an office-call, or even to accept any less amount that the patient may see fit to offer, rather than lose the business altogether. If you charge a fee as large

as that of the best men about you, no one but a fool will pay it if he knows you to be a beginner; and he will not be likely to do so again. Should he do so, though, his very weakness would make him of little value to you in securing new patients. Consequently, it is advisable to charge, at the start, a moderate fee for your services; for the reason that you hardly can esteem them of more than moderate value to your clients until you have had sufficient actual experience to back practically what you have memorized in your studies at college. It is only after you have demonstrated to the community your efficiency and the superior value of your services that you can, with good grace, exact a larger reward than at the beginning. In this connection, let me add one point that usually is overlooked when men, upon becoming busy, raise their prices.

While natural ability and attention to one's work undoubtedly are the cause of the successful upbuilding of a practice, the doctor so fortunate as to be able to do this never should forget that he owes much of his advancement to the good will of his older patients and their earnest endeavors in his behalf. Hence, it becomes an act of gross ingratitude for him to apply to these persons or families his increased prices. To do so simply amounts to penalizing those who befriended us, believe in us, and, in their enthusiastic endeavors in our behalf, are instrumental in bringing to us the very excess of work that enables us to take this step. It would be far more equitable—and judicious—to give these old friends the privilege of compensating us with whatever honorarium they might feel is fair under the circumstances; thus following the old English custom—a beautiful one among honorable people, but, unfortunately, not to be thought of at the present time, if one has not ample-enough means to be independent of an income from practice.

The plain, straight, business way of meeting this whole question is, to continue the old rates for all those patients who were attached to you at the time you raised your charges, making the new rule apply only to newcomers. Such a change should be announced to all your old patients, so that they may govern themselves thereby in recommending you to others. I purposely avoid mentioning any particular fixed fee, for the reason that what this should be depends upon circumstances, as I have already stated.

A fair average office-fee in most of our larger cities would be $1.00, while that for visits should range from $1.50 to $2.00. The second naturally will depend somewhat upon the distance to be traversed and the ease of reaching the patient; for, it often is more convenient to see a certain patient twice at a given distance than it is to visit another once, although the distance is not greater, but it is more difficult to reach the latter. When several calls at a distance are made on the same trip, you can afford to make each at a lower figure than you could if they were made separately.

When one first enters upon the practice of medicine, there is a sort of self-conscious timidity about making an honest charge for the service, as if one felt that not quite the money's worth was being rendered for the amount received. In this, I recognize the intuitive appreciation that conditions are sadly out of joint, in which one man is so unfortunate as to have to give the earnings of an entire half day to another for a few minutes' time, a trivial amount of medicine, and an expert judgment that often comes without effort. However, necessity compels this alike upon the part of each: circumstances force the one to exact compensation, and the other to pay it. The fact that this is not as it should be is no reason why the young doctor should make himself the victim of precarious circumstances by foregoing the compensation without which it is absolutely impossible for him to maintain his efficiency as a ministrator to the needs of the sick and injured.

After you are once established, your fees should never be less than those of your equals in public estimation. Even before your reputation is established, your fees should not be less than those of others in the same vicinity under like conditions. Never have the appearance of undercutting other physicians, as though they were competitors in some ordinary business. It is undignified as well as damaging to yourself.

Range of Fees, and Making Exceptions

It is wise, even at the very beginning, to charge the same fees exacted by established practitioners, but subject to a more liberal discount than they allow; not so much, though, because your services may be worth less, as for the reason that you are sure to attract a poorer class of patients. In discounting bills, always render and receipt them in full. This avoids written and signed evidences of your giving discounts, shows that you value your services as high as does any other physician in your vicinity, and impresses upon the beneficiary of your

gratuity the extent of your generosity. It hardly is fair to the doctor that he render all kind of services, regardless of their value, at the same uniform figure. Lawyers do not do this—then, why should we? A lawyer charges in proportion to the value of his services, regardless of the time or effort required. Nor can it be said that we of the medical profession are essentially different from those of the legal because, mayhap, we deal with unexpected misfortunes; for, so do the lawyers, and they take good care that their fees grow in proportion as a client's position is unlooked-for and unfortunate. I do not mean to say that the physician, the representative of the noblest of all professions, should take an unfair advantage of a confiding patient, but I do mean that his compensation should be adequate, and commensurate with the services rendered, so far as, and whenever, this is possible, subject always to the ability of the patient to pay. Let me give an illustration.

To attend a case of typhoid fever daily for a number of weeks, when this is running a typical course and there is nothing to do but to come in, look pleasant, shake hands, ask a few questions, say an encouraging word, tell the patient to continue as before, and promise to return on the morrow, the doctor evidently is not doing much work and can afford to render this service at a minimum figure; more especially if the patient is in straightened circumstances, and still more so if he is too honorable and too conscientious to evade payment, while having too much pride or gratitude, or both, to ask for a discount. On the other hand, if you are treating a case of diphtheria or scarlet-fever, both of which are very contagious, decidedly malignant, and highly dangerous, you are running the risk of conveying the infection to the precious members of your own family, or to some of your patients and other members of the community, all equally as precious to those similarly related to them. On this account, it is obligatory upon you to take every possible safeguard to avoid contaminating others. But all this involves trouble and loss of time, such as is not at all necessary in attendance upon patients having noncontagious diseases. You have a right to make your charges correspondingly larger; and they should be, whenever possible.

You may be called to attend a child having spasms and may have to remain there for a whole hour; a service that many unreasonable people will expect you to render at the usual fee for a single ordinary visit to the house. To this, however, you never should agree, though you may never be able to get more than the ordinary amount. If thus forced to, it is proper, under the circumstances, to accept the proffered sum with good grace, but strictly with the understanding that you are not willing to be called again at the same figure under similar circumstances.

Lump-Sum Charges

For a long time it has seemed to me that it is fairer, both to patient and physician, to charge lump sums for the treatment of certain diseases. We have one precedent for this in our attendance upon confinement-cases, which we do for a fixed sum, including all the attention at the time, together with the subsequent attendance, provided there are no undue complications requiring too much extra work, or the assistance of another physician, for either of which we expect extra compensation (as most patients well understand, and to which they usually readily agree). Similarly, it seems to me that we might treat an uncomplicated case of typhoid fever, running a course of about four weeks, for a fixed sum. So, also, with various other diseases, say, scarlet-fever, diphtheria, measles, or ordinary tonsillitis.

It is a great mistake to present itemized statements, enumerating specific amounts for office-consultations and house-calls. It places a uniform value upon services that vary in importance between wide extremes, and which should be charged for accordingly. If a patient's confidence in a physician and his desire to be attended by him is so slight or feeble that he stands upon the size of a bill measured in dollars and cents, as compared with the total number of visits and office-consultations, he is bound to him by so slight a thread that the doctor should not regret its breaking, though this had preferably be done by him.

Resist the temptation of overcharging the rich for ordinary services. They very properly resent it, and are likely to dismiss you, giving their wealthy friends their reason therefor, and thus exclude you from their patronage. However, extraordinary services, such as operations, for instance, you may charge for with much greater freedom. It has been suggested that, when asked for your bill after rendering a great and valuable service in the ordinary way in the family of a wealthy man, such as having successfully carried through a critical case of pneumonia or typhoid fever, the man himself perhaps the patient, you gently remind him of the value

of his life to him and of the fact that you have saved it under grave conditions. This, in the hope and expectation that you will be invited to charge liberally; but, if disappointed in this, you are to present a bill for the regulation amount.

My advice to you is, never to engage in indirections of this kind, but manfully to present a bill according to your customary rates, making extra charges, however, for the special attentions commonly exacted by the wealthy upon appropriate occasions; the latter, though, better being specified, not necessarily by items, but in the aggregate. Such conduct puts you on a better footing with people of this class, and does not prevent them from remembering you in some grateful way in addition to the payment of your bill.

Let People Know Your Conditions

It is advisable to give patients, particularly newcomers, an idea as to what your rates are, before they engage you, by a suitable card displayed in your waiting-room. This card should not name any definite sum as your office-fee, but should indicate your minimum charge, and intimate that it may be more than that; about like this: "OFFICE FEES from $1.00 up." This implies that you will see no one professionally in your office for less than the amount mentioned, but that more may be charged, and that anyone may have to pay more if his ailment is one for the treatment of which you exact larger compensation.

Another sign in your waiting-room, which states that your office-work is strictly for cash pay, will bring to you many a dollar during the course of a month that you otherwise never would see. The old saying about a bird in the hand being worth two in the bush does not do justice to the average doctor's way of not doing business, for it would be stretching a point with a vengeance to say that a dollar in hand was worth only two in a patient's pockets. A fairer ratio would be as one to four. In justice to the average patient, I am obliged to say that I believe two-thirds of the cause for this is owing to the doctor's own inattention to the most ordinary business methods.

Just as special services at a patient's abode merit a special fee, so, also, does one kind of office-work deserve greater compensation than does another. To ask a few questions, hand out some medicine, and be done with a patient in five minutes, is one thing; to help a patient partly to undress, arrange an electric battery, wet a pair of electrodes, then carefully pick out the motor points at certain portions of the trunk and extremities, to stimulate the nerves and cause muscular contractions during a period of twenty minutes or more, then help him to get ready, and finally supply him with medicine, all this consuming at least twenty-five minutes, is another proposition. Manifestly, this latter treatment is deserving of larger remuneration than the former.

If a given patient is unable to pay the extra charge, but you are willing to treat him for what he is able to give, it is better to let him know the measure of your concession. Not to tell him of it, necessarily cheapens you in his eyes, for he himself cannot wholly estimate the value of your time and services by your fractional charge, and cannot be expected to guess at how generous you are with him. You can let him know all this in a delicate way, with every regard for his sensibilities, however keen they may be, thus enabling him to appreciate the worth of your time and service, and to have the opportunity of being grateful for your generosity and consideration. He will like you better for it, will think more of you, and do more for you.

Occasionally patients will come to your office in whose cases it would not be fair to charge even your minimum fee, as, for instance, those who come three times a week for several months at a stretch. Thus, you may be treating some chronic ear, nose, or throat trouble that requires a momentary local application daily or upon alternate days, each treatment consuming at most perhaps one minute at two visits out of every three. This work is mere routine and should be charged for proportionately.

While I advise you at all times to be fair to yourself, I should be unjust, indeed, did I not also urge you to be likewise to your patients. Patients of the kind just considered should be treated by the month. You should have an understanding with them at the beginning, at which time it should be agreed upon how often and for how long a period it is likely that the patient will have to call on you before he can hope to be cured; and how much it will cost him per month. In arrangements of this kind, in which a relatively small lump sum is charged for an aggregate number of treatments within a definite time, payment should be made in advance. This has the added good effect of insuring the patient's attendance for at least the length of time paid for, during which you will have a fair opportunity of demonstrating the efficacy of your treatment.

(*To be continued.*)

What Others are Doing

COCCYGODYNIA

Coccygodynia (coccydynia, coxalgia), although actually meaning "painful coccyx," is a term loosely applied to almost any painful affection in the coccygocrural region. This, Hamant and Pigache (*Rev. d. Chir.*, Jan., 1914) hold not to be good practice and plead for a restriction of this term to the coccyx alone—including any pain referable to it. (By the way, Kokkyx is the Greek name for cuckoo and was applied to the terminal bone of the spine because of its fancied resemblance to the cuckoo's bill.)

Coccygodynia, then, designates that severe and persistent painful affection of, or radiating from, the coccyx and which proceeds from a luxation of that bone; the latter the result of a fall or blow or brought about at difficult childbirth. This being the situation, the treatment of coccygodynia can only be surgical, and complete exsection is the sole method promising certain and complete cure; and this without fear of any subsequent functional disturbances.

ISOTONIC SALT SOLUTION FOR INTRAVENOUS USE IN EMERGENCIES

It can easily happen that distilled water and chemically pure sodium chloride are not at hand when intravenous injections or hypodermoclyses are urgently called for to save life. Consequently the practical experience of a practitioner who met such emergencies will be welcome to many a doctor, especially those in rural districts. Quite possibly many already have solved the problem for themselves; nevertheless, the specific statement following may not be amiss, because not taught in textbooks and from the cathedras.

Dr. Friedrich Hercher, of the St. Vincent Hospital at Ahlen, Westphalia, relates in the *Muenchener Medizinische Wochenschrift* (1914, p. 1987) that on several occasions he encountered the difficulty mentioned, and, since his patients were as good as dead from exsanguination, he took chances; making the available drinking-water (well or hydrant) and table salt from the kitchen do. He dissolved 2 teaspoonfuls of the salt in a quart of the water and in a covered vessel (glazed, if to hand), boiled this for thirty minutes, allowed to cool, then filtered it through sterile absorbent cotton into a sterilized receptacle. Because of the satisfactory results obtained, with no untoward effects from these crude solutions, the author has employed this method many times in his practice. He also has, on occasion, injected intravenously plain drinking-water sterilized by boiling as above (no salt) without bad effects, except that once in a while a light transitory fever or also chills have occurred, nothing more.

ESPERANTO DURING THE WAR

In view of his experiences encountered in the present war, M. Schwab warmly recommends (*Klin.-Ther. Woch.*) that some international auxiliary language be adopted by all organized agencies concerned with the saving of life and relief of suffering, whether for service in peace or in war. The author specifically mentions Esperanto, an artificial language easily learned and practically adaptable to all needs as to vocabulary.

CALCIUM SULPHIDE IN PELLAGRA

We find another warm advocate of calcium sulphide in pellagra in Dr. R. O. Braswell, who in *The National Eclectic Medical Association Quarterly* (March, 1915, p. 225) declares that when this remedy is given in large quantities it will relieve and benefit all cases of pellagra and make a permanent cure in a very large percentage. To be effective, not less than 10 grains must be given each day, and in many instances it is necessary to give 20, 30 and even 40 grains a day, until the system is saturated.

In one case Doctor Braswell gave 40 grains of the calcium sulphide a day for five days, but at the end of that time there was nausea and vomiting due to saturation with the remedy. Then the patient was given 36 hours' rest, and in the interim received small

doses of a saturated solution of magnesium sulphate. Then the calcium sulphide was resumed, 2 grains being administered every two hours for a period of ten days, after which the magnesium-sulphate course was resumed. This alternation was continued for some time and resulted in complete cure.

Doctor Braswell also reports another case of pellagra, a very severe one, in which saturation with calcium sulphide proved successful. He says that he made no change in diet in the treatment of either of these cases, except to exclude fats and limit the use of cooking oils and grease in general.

NEW OPERATION FOR VARICOCELE

Aiming at high anchorage of the testicle and simultaneous shortening of the blood column pressing upon the branchlets of internal spermatic vein in the simplest manner for the relief of varicocele, R. Franck (*Zentralbl. f. Chir.;* cf. *Militaerarzt*, 1915, No. 1, p. 12) developed the following new procedure, which has proven satisfactory in 8 operations:

Luxate the testicle. Sever the inferior scrotal ligament, leaving the stump next the testicle sufficiently long. From this ligament, the testicle is to be suspended, but inverted—upside down. Since suturing this ligament directly to the external inguinal ring would place the testicle too high, cut a flap—5 cm. long, 2 or 3 cm. wide—out of the external oblique fascia, its base toward the inguinal ring, and then turn this flap downward like a hinged lid. To this fascia flap, now fasten the scrotal ligament by means of wide "silk-button" sutures.

MISCONSTRUING CERTAIN HEART IRREGULARITIES

Altogether too often physicians misconstrue the significance of certain irregularities of cardiac action in otherwise healthy young individuals, according to James J. Mackenzie, in *The British Medical Journal* (Nov. 21, 1912); the majority, in conformance with the traditional, but erroneous, views on cardiac pathology, forthwith treating every unusual sound or movement of the organ as a grave disorder. This is unfortunate, in that it imposes harmful worry upon those concerned, while often excluding the person from a desirable occupation or even life-insurance.

This authority unqualifiedly tells his readers that wide observation, extending over many years, has convinced him that a certain form of irregularity of heart action in the young, and which is so very frequently encountered, is a harmless phenomenon—may indeed, be looked upon as actually physiologic.

The author distinguishes four species of irregular heart: (1) The alternating pulse—pulsus alternans—a mark of high-grade exhaustion of the heart-muscle; (2) irregularities in the fibrillation of the atrium; (3) extra systole of healthy adults and in certain forms of heart disease; (4) the youthful type mentioned above. This latter type of irregularity—the subject of this article—is characterized by changes in the duration of the diastolic phase, and can readily be recognized by auscultation.

The practitioner should not permit himself to be misled by unusual functional sounds; indeed, the essential need is, to test the functional quality of the heart-muscle—a measure thus far deplorably neglected in the education of physicians.

ANIMAL CHARCOAL IN ZYMOTIC INTESTINAL DISEASES

According to official announcements (*Wien. Med. Woch.*, 1915, p. 170), animal charcoal (from blood) is finding widespread employment in Austria-Hungary in the treatment of zymotic intestinal diseases, notably dysentery and in the cholera hospitals of Galicia, this measure giving great satisfaction. However, results are not uniform, by reason of the imperfection of some batches of the preparation sold; in consequence of which the following tests are appended, to which animal charcoal must respond for therapeutic purposes, according to the pharmacologic institute of the German University of Prag (W. Wiechowske, director); the object being, to determine (1) its absorptive power, (2) impurities soluble in hydrochloric acid, and (3) impurities soluble in water and in lye, to wit:

In a stoppered test tube, shake together 0.1 Gram of the charcoal, sifted, and dried at 120° C., with a 1.5-percent aqueous solution of Merck's medicinal methylene-blue hydrochloride: complete discoloration must ensue within one minute.

Boil together for between five and ten minutes 5 Grams of the charcoal with 150 Cc. of double-normal hydrochloric acid; when cool, add distilled water to complete 200 Cc.; filter. Take 150 Cc. of this filtrate and evaporate it to dryness in a weighed capsule;

the residue, dried at 110° C., must weigh not more than 0.05 Gram.

Now, shake together some of the charcoal with distilled water, then filter; the filtrate must yield not more than a trace of turbidity when silver-nitrate solution is added.

Boil some of the charcoal with lye-solution: no coloring matter must be abstracted.

MULTIPLICATION OF THERAPEUTIC EFFECT BY SYNERGISTS

Again has been discovered the multiplication of therapeutic power by the union of synergists—this time in France. The Paris correspondent of *The Lancet* (Jan. 18, 1915) says that, at a recent meeting of the Societé d'Etudes Scientifiques contre la Tuberculose, Renon spoke of the action of peronin, thebaine, narceine, papaverine, and helenine in phthisical coughs. The use of these agents separately may be well known, but this is not the case with their combinations: "which method did not merely add to their effects but rather modified them, and often multiplied their therapeutic action."

Thebaine and helenin were indispensable for the tonic and excitant action of thebaine on respiration and circulation, and the special action of helenin on the cough and its slightly stimulant effect on the organism. One combination he advised consisted of peronin and thebaine, 1 centigram each, with helenin, 2 centigrams, in pill or cachet; two such doses daily at intervals of five hours or less.

Helenin is the active principle of elecampane, a remedy for the lungs that has been so often ponderously "extinguished," but will not stay down. Thebaine, or paramorphine, is a remedy that deserves far more study than it has ever received. Some day that remarkable arsenal of therapeutic weapons found in opium will be investigated.

ULTRAVIOLET LIGHT FOR DESTROYING TETANUS-GERMS IN THE LESION

At a meeting of the Medical Society of Hamburg, E. Jacobsthal and F. Tamm made a preliminary announcement on the subject embraced in the title (*Muench. Med. Woch.*, 1914, p. 2324), which we condense, as follows:

The spores of tetanus, as also those of anaerobes responsible for malignant edema (gas-phlegmons) are unusually sensitive to the short waves of violet light. This fact established, the investigators instituted experiments upon wounds infected, both artificially and in a natural way, with tetanus-germs, subjecting them to the violet light from a Kromayer quartz lamp and to artificial solar light. In a number of instances, tetanus-bacilli as well as edema-bacilli were thus completely eradicated.

Because of the demonstrated presence (by means of the Berkefeld filter) of the large amounts of toxin present, the wound should be cleaned surgically, in addition. Thus, it is plain that radiotherapy may powerfully assist other treatment whenever amputation is undesirable or impossible.

ORTHOPEDIC TREATMENT OF SPASTIC PARALYSES

Doctor von Baeyer, of Munich, for some time has been engaged in developing a new method of treating spastic paralyses consequent upon multiple sclerosis, amyotrophic lateral sclerosis, and similar diseases. The exact procedure is not described in his communication (*Muench. Med. Woch.*, Jan. 26, p. 135), this being reserved for another time, but is merely indicated as consisting in winding around the affected extremity an unelastic bandage (socalled "waist-band") about 3 cm. wide, rather loosely, so as not to interfere with the circulation; the best location being ascertained by trial, occasionally even several bandages being called for. For elbow paralysis, the bandage is placed to best advantage slightly below the bulge of the triceps muscle.

The author relates how he happened to hit upon this simple expedient, the favorable action of which—in the absence of a better explanation—must depend upon a relaxation of the spasm. Thus: "I said to myself, these spasms depend upon a removal of the checks; consequently there will occur instances where some of these inhibitions persist. Hence, we should aim so to stimulate the remaining checks that they can substitute those lacking. Since, however, these checks no doubt are released or directed by sensible impressions, it devolves upon us to augment the sensible recognition of the same during movements, especially in a muscle. But, the sensible recognition in a muscle, the sense of contraction, can materially be increased by tying a band around it. (A fact readily proven to oneself.)

Doctor Baeyer does not contend for the correctness of this theory; still, the eminently satisfactory results have made it very probable; at any rate, they were such that he did not hesitate to test the procedure when, in the charge of a military hospital, he was confronted by numerous cases of spastic paralysis following shots in the head.

With these bandages applied, the patient is able to execute movements of the arm or leg previously impossible, or, a seriously impaired joint-movement can be made more easily and quickly. While there have been failures, it, still, has been rare when such a patient did not experience a certain amount of relief.

Therapeusis hitherto has been helpless in paralysis caused by head wounds, beyond the prescribing of exercises; however, this new treatment not only supplies a valuable aid to that measure, but, in fact, not infrequently first makes it possible at all. Particular service is rendered by these bandages in attempts at walking.

A supplementary statement is to the effect that by means of a similar treatment benefit has been secured with respect to standing and walking, in some individuals, in disturbance of the sense of eqilibration, owing, for example, to lesions of the cerebellum or to multiple sclerosis; here, a band being placed around the pelvis, between the trochanter and the iliac crest.

INFLUENCE OF SODIUM BICARBONATE UPON PANCREATIC SECRETION

Through experiments with dogs with duodenal fistulas, E. Wilbrand, of the Physiologic Institute of Hamburg (*Muench. Med. Woch.*, 1914, p. 1437) has established the fact that ingestion of sodium bicarbonate, especially when given in solution, causes a marked diminution in the secretion of pancreatic juice.

DARIER'S DISEASE AMENABLE TO THERMOCAUTERY

The more technical terms bestowed upon what eponymically is known as Darier's disease are, psorospermosis, keratosis follicularis, and ichthyosis sebacea corneæ. This disease consists in a hyperkeratic derangement of the skin in various portions of the body, the papules and horny crusts often becoming suppurative and giving off an intolerable stench. Its etiology does not as yet seem entirely determined, but certain psorosperms (Rainey's bodies) are named as the cause. Psorospermosis is of infrequent occurance, but 5 cases that have come under the observation of A. Pohlmann (*Arch. f. Derm.*; cf. *Wien. Med. Woch.*, No. 13, p. 571) demonstrate that it may run in families and be hereditary.

Inasmuch as hitherto this affection has proved utterly unamenable to therapy, nor heals spontaneously (sulphur, tar, mercury, arsenic, and Roentgen-rays having failed, among other measures), it affords satisfaction to learn that, in the few instances in which tried (Pohlmann corroborating K. Herxheimer), thermocauterization has effected a cure.

ANTITYPHOID VACCINATION GAINING IN FAVOR

The United States Public Health Service is distributing, for publication, the following item, and we believe this matter should interest every reader of this journal. So, we reprint it exactly as received:

An enormous increase in the number of persons seeking antityphoid vaccination is reported by the U. S. Public Health Service. Not alone is this increase manifested among the beneficiaries of that organization and government employees, but the general public is also awakening to the value of the inoculation. Reports from physicians throughout the country indicate that many are receiving the preventive treatment, and laboratory establishments have had a greatly increased demand for the vaccine. So great is the call among employees of the government that it has been necessary to issue a second edition of the Secretary of the Treasury's circular stating the localities where the treatment may be received. It is estimated that during 1914 over 100,000 persons throughout the country were immunized and it is believed that in 1915 the number will exceed 300,000. In four counties of North Carolina, where campaigns are now being conducted, it is established that 20,000 people will be immunized.

The public is seldom slow to accept an innovation of worth. The reduction of the case rate in the Army from 536 per 100,000, before the discovery of antityphoid vaccine, to 3, since inoculation was made compulsory, has not passed unnoticed. During four months of 1898 there were over 2000 cases of typhoid among 10,000 soldiers encamped in Florida; in 1911, among 20,000 men similiarly encamped, there were but 2 cases. If such a degree of immunity can be harmlessly conferred upon a body of men living under adverse conditions and whose age renders them susceptible, the conclusion is that protection can just as easily be afforded ordinary citizens.

Antityphoid vaccination is quite as simple as that for smallpox, and even children do not complain. There are no local effects other than a slight reddening at the site of the injection, and sore arms are entirely lacking. In a small percentage of cases, a mild

systemic reaction, accompanied by headache and a slight rise in temperature, occurs, but if the treatment is given at night the person's rest is undisturbed and he is entirely unaware of these symptoms. In the majority of instances, however, there is not the slightest inconvenience. The immunity probably lasts for several years, although its duration is less than that of smallpox, which frequently persists for a lifetime.

It is believed that more widespread recognition of the benefits conferred by antityphoid immunization will have an immediate effect upon the morbidity and mortality rates for the disease. As a result of sanitary measures alone, the death rate from typhoid fever has been cut in half during the last fifteen years. What has been done in fifteen years of sanitation can be accomplished in as many weeks with inoculation. It is conceivable, if immunization attains the general recognition that smallpox prevention has secured, and there is no reason why such acceptance should not be accorded it, that typhoid fever will be a rare disease by 1930. This means that even many of the older physicians of today will live to see the time when the infection will no longer be common.

One point must be considered in making such a prognostication. As immunity is conferred, the necessity for immunization becomes less apparent to the general public, and the method will, to a certain extent, be neglected. This is the situation as regards smallpox in the country today, and for this very reason the disease will persist until universal immunization is practiced. Therefore, even with perfect methods, the entire elimination of the disease is not to be looked for.

WHAT IS "GOOD WHISKY"?

In *The Weekly Bulletin* of the Department of Health of the City of New York for August 28, we find an extract from an article entitled, "A Summary of Investigations Concerning the Physiological Aspects of the Liquor-Problem," written by John S. Billings. This paper deals with the one phase of the liquor-question which we have not seen discussed, but one which, nevertheless, is of importance. Every physician has heard it stated again and again, and many no doubt so believe, that one of the greatest dangers in the use of whisky or brandy lies in the employment of cheap, low-grade, adulterated spirits. However, this idea is combated by Doctor Billings in the following words:

"The common idea that a large part of the injury to health due to the use of alcoholic drinks is caused by injurious substances, such as fusel-oil and furfurol, which have not been properly removed, or by substances added as direct adulterants, is erroneous, as is also the common notion that cheap liquors contain large quantities of such harmful ingredients. The injurious effects of the amount of fusel-oil present in ordinary saloon-liquors are trifling in comparison with the effects of ethyl-alcohol contained in them; and the principal adulterants in the cheap whiskys are water and caramel, the latter a harmless coloring matter made from sugar.

"The general conclusion is, that fine old whiskys and brandies are nearly as likely to produce ill effects as do the cheaper varieties of the present time, if taken in the same quantity; and, in general, the injurious effect is in proportion to the ethyl-alcohol contained, which seems to be the chief reason why wine and beer are less injurious than distilled liquors."

ON THE ACTION OF COAGULEN

Coagulen, which is a solution of the thrombozyme of the platelets of animal-blood, has been further experimented with and reported upon by A. Fonio, of the Bern university, and W. Kausch, of the Auguste Victoria Krankenhaus at Berlin (*Grenzgeb. d. Med. u. Chir.*, 1914, p. 642, and *Deut. Med. Woch.*, 1914, p. 754, respectively).

The former, Fonio, points out that a 5-percent solution of coagulen (originally called coagul*in*), administered either subcutaneously or intravenously, considerably reduces the coagulation-period of the blood, while, there is no danger of any embolism or thrombosis resulting. Accordingly, this preparation is of excellent service in internal and external traumatic bleeding, and likewise in hemorrhages dependent upon constitutional conditions, such as hemophilia, hemorrhagic purpura, and scurvy.

Kausch, on his part, after extended use at operations, declares coagulen to be an excellent local styptic; his manner of using being, to apply to the bleeding surface a pledget of cotton wet with a 10-percent solution, or by sharply squirting the solution upon it from a fine-nozzled (hypodermic) syringe. However, the application not being infallible, Kausch does not hesitate to employ clamps under circumstances. The pledgets may have to be repeated (removal being cautious), and in spaces, coagulen tampons. Circumstances

determine how long these should remain in place.

The author urges further experimentation, the more so, since side-effects have never been observed, also no bad influence upon the lesion or course of healing.

Considerable importance seems to attach to the statement published by H. Riedl, of Portorose, Austria (*Wien. Klin. Woch.*, No. 1, 1915), to the effect that by means of a single intravenous injection of 1 gram of coagulen he effected a lasting cessation of an uncontrollable tuberculous pulmonary hemorrhage in a seeming hemophiliac.

HOW EMETINE ACTS IN ENTAMEBIASIS

The value of emetine in amebic dysentary is so well established, remarks Randolph Lyons in *The American Journal of the Medical Sciences* (July, p. 97), that a further report of its successful use scarcely would be of general interest at the present time. Accordingly, Doctor Lyons devotes the major part of his exceedingly interesting paper to a discussion of the mode of action of this alkaloid in dysentery, first raising the question as to whether or not emetine affects deleteriously amebas that are outside the bodily tissues and, therefore, not in direct contact with the circulation; that is to say, those existing free in the lumen of the large intestine.

The results of a series of experiments and of a considerable clinical experience are presented, and these demonstrate that the amebicidal action of ipecac and of emetine is limited to the amebas actually present in the tissues, while the parasites harbored in the intestine are not directly reached by the alkaloid administered by mouth. However, when all the amebas present in the tissues have been destroyed, the dysenteric lesions of the gut heal with remarkable rapidity, and the patient is cured. Relapses, when they occur, are due to the fact that some of the amebas escaped destruction because of their being encysted. In this stage, they resist any form of medication and produce very little irritation.

However, in some 80 cases of amebic dysentery which he has treated, Doctor Lyons has observed this fact: In the majority of instances, even during periods of improvement or apparent wellbeing, the patient will admit experiencing slight abdominal discomfort, even though the stools apparently are normal. When this symptom is present, his observation has shown, some encysted parasites still remain imbedded in the tissues of the colon, and it is in cases of this kind that relapses are likely to occur when these encysted forms again become vegetative.

HOW EMETINE SHOULD BE ADMINISTERED IN AMEBIC DYSENTERY

In the paper by Lyons just cited, the writer expresses a strong preference for the subcutaneous over the oral route. He has observed that when the drug is given by mouth it is exceedingly prone to exert a drastic purgative action, especially when any considerable quantity is administered. He relates the case of a man, 44 years of age, suffering from dysentery and hepatitis, who, because of the urgency of the symptoms, was given 1-3 grain of emetine hydrochloride, both by needle and by mouth, twice a day, that is, a total of 1 1-3 grains of emetine hydrochloride daily. Distinct purgative action was produced, with marked abdominal discomfort. After two days, it was necessary to stop administering the drug by mouth, and improvement followed rapidly. In another case reported, in which the emetine was taken internally, the bowels became extremely loose and the patient became emaciated and feeble. Examination of the stools showed the presence of blood clots, pus, and mucus. When he stopped taking the drug by mouth, recovery followed promptly.

Lyons has observed, in his own case, that 1-2 grain of emetine in solution, taken by mouth, causes nausea and vomiting after an interval of an hour, followed in another hour by loose stools, together with griping and some abdominal discomfort that persisted for five or six hours. As a consequence, Lyons' conclusion is, that emetine should be given by mouth under circumstances which do not permit of hypodermic administration. When it is necessary to give the drug by mouth, it should be administered only in small doses, say, 1-6 to 1-3 grain.

The inconveniences following the subcutaneous injection are relatively much less than those after its internal use. However, several facts should be borne in mind: first, the alkaloid emetine is slightly irritant; second, the hydrochloride is slightly acid in reaction. When a small dose is injected (1-3 grain, for instance), both these factors are negligible, since the drug is rapidly absorbed. On the other hand, if a large dose, say 1 grain, is injected, it may cause considerable local pain and irritation, owing to the proportionate augmentation of the factors mentioned. Intramuscular injections cause more discomfort

than will subcutaneous ones. The inflammatory reaction thus produced at the site of introduction may persist as an infiltrated area for one or two weeks. There is no doubt that such a reaction seriously retards the absorption of the drug.

For the reasons enumerated, Doctor Lyons advocates the repeated injection of small doses, especially when prompt and lasting effects are desired. As a rule, he gives emetine in 1-3 grain doses morning and evening. In ordinary cases of amebic dysentery in adults, 1 grain daily is sufficient, and Lyons has never seen a case of dysentery in which more than 2 grains daily were required, provided it was given in small, repeated injections, as just suggested.

The emetine-treatment should be continued, as a rule, for four or five days after the stools apparently are normal. In the early days, the tendency was to discontinue the emetine as soon as the stools became formed. This is now known to be a mistake. In general, the duration of treatment is from one to two weeks, and it is seldom wise to prolong the administration of the drug beyond two weeks, even when a diarrheal condition exists, unless active entamebas still are found in the stools. The diarrheal condition may be owing to an intestinal catarrh or to an associated bacillary infection, or possibly even to the drug itself.

During a course of emetine, Lyons has found, moderate purgation with castor-oil or a laxative saline often proves beneficial.

THE ILL EFFECTS OF EMETINE

Ill effects from emetine are rarely encountered, remarks Randolph Lyons in *The American Journal of the Medical Sciences* (July, p. 97), unless the dosage of the alkaloid is unusually large or its administration prolonged for too long a period. In the treatment of dysentery, given in too large doses or for too long a time, it may produce or maintain a diarrhea. Allen saw nausea and vomiting caused by a single dose of 4 grains, although no other ill effects were observed.

Other physicians have reported mild attacks of peripheral neuritis following the prolonged administration of the emetime. Eshleman reports one case in which a general purpuric eruption developed in association with severe peripheral neuritis in a patient who had received 2 grains of emetine daily for five or six days. In still another case, reported by Spehl and Colard, there occurred temporary muscular paresis, facial edema, rapid pulse, and diminished tendon reflexes, from which the patient recovered but slowly. Serious symptoms likewise were met with after the intravenous introduction of large doses of emetine, and Lyons recommends adherence to the original dose as proposed by Rogers for the intravenous use, namely, 1 grain.

The evidence shows, therefore, that, when given in usual dosage, emetine seems to be a perfectly safe remedy, but that very large doses are not entirely without danger. No death from emetine poisoning has ever been reported, so far as we can ascertain, and there is no evidence that permanent damage has ever followed its employment.

GAUGE FOR DOSE-SUFFICIENCY OF MAGNESIUM SULPHATE IN TETANUS

While magnesium-sulphate therapy for combating tetanus has gained a firm foothold, the problem by no means is a closed one, and one of the decided drawbacks in its application as yet is, the impossibility of knowing whether a given amount of the drug administered is enough or not enough. An attempt, seemingly promising results, to find an answer has been made by J. Schuetz, of Klagenfurt (Austria), who reports his observations in the *Muenchener Medizinische Wochenschrift* for January 26, page 135.

Thus far, the plan submitted rests solely upon experiments with rabbits; nevertheless, facts elicited are sufficiently encouraging to warrant investigation in wider circles. What may give added significance to these experiments is the fact that they were conducted at the Pharmacologic Institute of Wien and communicated to the Physiologic-Morphologic Society; further developments to be published in the *Archiv fuer Experimentelle Pathologie*.

The critical factor to be utilized in giving magnesium sulphate in controlling tetanic outbreaks is the fact observed that effective amounts invariably determine a marked fall of bodily temperature.

The other observation, and one of highest importance, is, that this reduction of temperature just mentioned positively is not consequent upon the general "narcotic" state induced by the magnesium, but is a phenomenon *running parallel* with the appearance and progress of the former, and arising, presumably, from a direct action upon the heat-regulating centers. Indeed, the temperature begins to drop before the magnesium has caused even the slightest trace of paralyzing effect, much less one of "narcosis".

Reversely, the temperature-curve, after narcotizing doses, exhibits a pronounced parallelism with the time rate of the setting-in of the symptoms of paralysis and narcosis. Actually, a little experience permits of basing a prognosis, as to the course of a magnesium-toxicosis, upon the relative steepness of the temperature-curve.

Furthermore, studies concerning cumulation of the drug disclosed another interesting fact, namely: when the magnesium salt is injected in small doses at regular intervals, the temperature falls at even rate; while, after a certain *total dose* has been reached, the paraylsis and narcosis appear rapidly and also, as a rule, with a steeper drop in the temperature-curve.

Animal-experiments are not determining; yet, here we have a most delicate indicator for measuring the influence of magnesium, and the revelations point to greater possibilities to be expected from a concerted, continuous control of the patient's temperature.

"THE MOST POWERFUL ANTISEPTIC:" HYPOCHLORITE SOLUTION

Telegraphic reports of the discovery in France of the "most powerful antiseptic" have appeared recently in American newspapers. This antiseptic, we learn from English and French medical exchanges, consists of a mixture of calcium hypochlorite, sodium (or calcium) carbonate, and boric acid.

Paris Medical (August 28, p. 318) states that this antiseptic has been worked out by Dakin and Carrel, the former of the Herter Laboratory, New York, the latter, the well-known representative of the Rockefeller Institute, and both now serving the latter institution in France. These investigators reported this important work at a meeting of the French Academy of Medicine, held August 2. We learn that they overcame certain disadvantages connected with the use of chlorinated lime by neutralizing its acidity with sodium carbonate and rendering it stable by the addition of boric acid.

As pointed out in an editorial in *The Lancet*, the antiseptic power of this mixture depends upon the presence of free hypochlorous acid, the bactericidal power of which has been known for a very long time. However, as Dakin shows in his excellent paper in *The British Medical Journal* (Aug. 28, p. 318), hypochlorite, as ordinarily prepared, is of extremely variable composition, containing free alkali and sometimes free chlorine, consequently being irritating when applied to wounds.

Dakin describes the method of preparing a hypochlorite solution that will retain the antiseptic qualities of the hypochlorous acid unchanged and which is much less irritating than the various preparations of chlorinated lime heretofore in use.

The problem to be solved is, to secure a substance or mixture that will be practically neutral in reaction under all conditions and especially when in contact with wound-tissues. This result is secured by the addition of boric acid, after the decomposition of the chlorinated lime (bleaching powder), with a solution of sodium carbonate. Boric acid is not added for the sake of gaining the insignificant antiseptic action of that substance, but, rather, to secure and maintain chemical neutrality, thereby avoiding the irritating action of free caustic alkali. It is stated that, if such an alkali is formed even momentarily when the solution is in contact with the raw tissues, it will at once be neutralized by the boric acid or acid borates present in the solution.

To prepare this solution, 140 Grams of dry sodium carbonate and 200 Grams of chlorinated lime are dissolved in 10 liters of water; the clear liquid is siphoned off, then 40 Grams of boric acid is added to the filtrate. The resulting solution, while, according to Dakin, not the "most powerful antiseptic known," certainly is exceedingly active and probably the least irritant one thus far devised.

Another important study of hypochlorite preparations is reported, in *The British Medical Journal* for July 24, by Smith, Drennan, Rettie, and Campbell, of the department of pathology of the University of Edinburg. These gentlemen combine the chlorinated lime with calcium carbonate and boric acid, the result being a product which may be used either as a dry powder, in a solution or as a gas. They state that comparative tests confirm the conclusion that "hypochlorous acid is the most powerful antiseptic known." The compound arrived at by these gentlemen is somewhat different from that produced by Dakin and Carrel, but the preparation by their process undoubtedly acts upon wounded tissue in the same way as does the solution produced by Dakin and Carrel's formula.

This inquiry is one of the utmost interest and importance. If we may believe the French, English, and American investigators who have been engaged in this work, the results obtained will prove of very substantial benefit to the profession. If any of our

readers desire to do experimental clinical work along these lines, we shall be much pleased to communicate with them.

EMETINE IN PYORRHEA ALVEOLARIS

Four cases of pyorrhea alveolaris are reported by Lyons (*Amer. Jour. Med. Sci.*, July, p. 97), in which the disease was cured, apparently, by the subcutaneous use of emetine. Doctor Lyons declares that it is too early to consider the question of relapses in this disease or to state definitely whether it will be necessary to give further courses of treatment with emetine in these cases in order to maintain the cure. However, the tendency of amebas to encyst and the fact that emetine given subcutaneously affects amebas only in the tissues must be borne in mind. In severe cases, where there are pus-pockets, he is of the opinion that combined local and subcutaneous use of the drug may be required to obtain the best results.

After a few injections of emetine, Lyons says, the amebas disappear from the gums and subjective and objective improvement is quickly seen. The tendency of the gums to bleed, usually so marked in this affection, is rapidly controlled by means of the emetine injections. He concludes with the statement that "emetine, subcutaneously and locally, has been shown to be practically a specific in pyorrhea alveolaris."

In view of the recognition by the medical profession of the importance of this disease as a factor in serious metabolic diseases, it is desirable that every physician be conversant with this method of treatment and urge its importance upon his associates in the dental profession.

BACILLARY INFECTIONS OF THE URINARY TRACT

Infections of the urinary tract are much more common than is generally supposed, according to F. C. Madden (*Lancet*, Aug. 7, p. 267). As a rule, there is an increased frequency of micturition; also considerable burning and irritation during and after the passage of the urine, which often is of a peculiar, characteristic cloudy appearance, owing to the suspension of fine granules in the fluid. Sometimes there are presented the common symptoms of cystitis, while in other cases there may be rigors, pain in the back and loins, and associated rise of temperature, pus being found in the urine when the attack is at its height. Under these circumstances, it is not uncommon to find a pure, or almost pure, culture of the bacillus coli in the urine.

The best results are obtained by the use of bacterins, but alkaline diuretic mixtures, followed later by a combination of hexamethylenamine and acid sodium phosphate will afford relief. To effect a permanent cure, the author advises use of the vaccines subsequent to the medicinal treatment.

Doctor Madden finds that women are peculiarly liable to these urinary infections, probably as a result of accidental contamination of the urethra through the vagina or rectum.

Doctor Madden's observations are of peculiar interest. It has been found that a very large percentage of the mild forms of cystitis so frequently observed in general practice reveal the presence of the bacillus coli in the urine, when this is examined bacteriologically. These cases often respond beautifully to bacterin-treatment, although such remedies as hexamethylenamine and arbutin generally are indicated, and these, when properly used, vouchsafe brilliant results.

HEXAMETHYLENAMINE

Hexamethylenamine, which, in the middle nineties, was introduced to the medical profession as a urinary antiseptic, by Nicolaier, of Berlin, is discussed at some length by C. J. Massinger in *The Eclectic Medical Journal* for June (p. 292). Part of this drug is excreted unchanged, but a large portion is decomposed, with the liberation of formaldehyde in the urine; and it is this free formaldehyde which renders it valuable in this direction. Hexamethylenamine has proved particularly useful in the treatment of infections of the genitourinary tract, as for instance in pyelitis, cystitis, prostatitis, and urethritis. Of course, if there is tuberculosis of the kidney or calculus, surgical intervention may be required; still, preceding operation in such cases, Massinger insists that hexamethylenamine should be administered.

If there is albumin in the urine, the doses must be kept down. Usually 5 grains four times a day or 7 grains three times a day will suffice, and it is but rarely necessary to give as much as 15 grains at a dose.

Massinger asserts that hexamethylenamine is less irritating to the kidneys than salol, and more efficient as an antiseptic. The same may be said as to copaiba, santal, and oil of turpentine. It is a good remedy in gonorrhea and should be administered from the

beginning, although in relatively small doses, say 5 grains four times a day.

Perhaps we may be permitted to add at this point that hexamethylenamine is effective as a urinary antiseptic only when the urine is acid. Consequently, in order to make it of value in the treatment of alkaline cystitis or other alkaline conditions of the urine, it is desirable to administer with it acid sodium phosphate, this probably being more effective as an acidulator of the urine than any other single remedy in use.

Doctor Massinger also speaks highly of hexamethylenamine in the treatment of gall-bladder infections, declaring that it is a most useful remedy in cases of cholecystitis subsequent to operative intervention. It is also of no little value, and in his opinion "perhaps our best remedy," in acute colds and for those suffering from acute or chronic bronchitis. Furthermore, it is worthy of a trial in any stage of acute or chronic rhinitis and other inflammatory diseases of the respiratory tract. Massinger thinks the use of this drug greatly lessens the possibility of the complications of acute rhinitis, such as sinusitis, otitis media, and bronchitis. For these conditions he advises large (10-grain) doses, accompanied by copious drinking of water three or four times a day. When given both in acute and in chronic bronchitis, he declares that hexamethylenamine produces results that cannot be compared with those from the remedies usually employed. In such cases, he has administered calcium iodide [calx iodata?] along with the hexamethylenamine, using also anything else that may be indicated.

BACTERIN-TREATMENT OF BOILS

The most striking and consistently successful results from bacterin-treatment are to be seen in the management of boils and furunculosis, observes F. C. Madden in *The Lancet* for August 7 (p. 267). So uniformly successful has this method of treatment been in Doctor Madden's hands that he now employs no other. The stock bacterins are utilized and have been found rapidly successful. He begins with an injection of 100 million staphylococci, following in five days with a 500-million dose, and after a similar interval increasing to 1000 millions. This series of three injections usually suffices to cure in an average case; but when the disease proves resistant even 5000 millions of the dead bacteria may be injected, the dose being gradually increased up to this point.

If the stock bacterins fail, then an autogenous bacterin should be prepared.

In association with this treatment, Madden advises dressings with iodine, boric acid or even antiphlogistine. Some form of yeast may be given internally, also calcium sulphide or the lactate or chloride of calcium.

We may suggest that a more elegant method of increasing the number of antibodies is, to prescribe nuclein instead of the yeast advised by Doctor Madden.

The treatment, as a whole, is excellent, and we believe will be found successful in the majority of cases.

POTASSIUM POISONING IN NEPHRITIS

In an elaborate series of experiments, undertaken by Wilson G. Smillie and reported in the *Archives of Internal Medicine* for August 15 (p. 330), it apparently is shown that the potassium salts are peculiarly toxic when given to individuals suffering from nephritis. The disease was induced in rabbits by means of uranium. In such nephritic rabbits, the ingestion of 1 gram of potassium chloride invariably caused death "with great suddenness." Doctor Smillie is of the opinion that death was not consequent upon the salt action, but, rather, upon the direct action of the potassium-ion on the heart-muscle.

Some observations on the effect of potassium chloride when given to patients suffering from chronic nephritis showed that this salt (potassium chloride), in doses having no effect whatever upon normanl idividuals, will cause acute poisoning when the person is nephritic. This acute poisoning is ascribed to the fact that, when the individual is suffering from real disease, the drug is not excreted and, therefore, quickly reaches a dangerous degree of concentration in the blood.

These observations have considerable practical value, inasmuch as potassium salts are frequently prescribed, especially as diuretics and alteratives, for persons suffering from diseases of the kidneys. If Smillie is right in his conclusions, potassium is a substance that always should be withheld from these people.

ALIMENTARY FEVERS

By means of ingenious and exact experiments (injection of various salts and sugars into the portal system), E. Loewegren (*Wien. Med. Woch.*, Mar. 13, col. 495) has incontestably proved correct the contention of Finkelstein, that a fever may rest purely upon an alimentary basis.

Miscellaneous Articles

Intravenous Medication, Especially with Sodium Salicylate and Guaiacol

HAVING read with much interest Mr. Carl Nielsen's article on intravenous injectino of salicylic acid and guaiacol (CLINICAL MEDICINE, August, p. 720), I am tempted to recite the results of my personal experience in this direction. To begin with, I may state that I have had considerable experience with intravenous medication, having, in the course of several years, given upward of one thousand such treatments and employed a number of preparations of various composition. As long ago as in 1906, when I last paid a visit to Europe, continental physicians were administering remedies intravenously, with some remarkable results, and meanwhile the practice has become popular among the progressive element.

As to this mode of giving sodium salicylate and guaiacol, Mr. Nielsen's article deals only with experiments conducted with animals, while we physicians are dealing with the human organism, with corresponding differences and responsibility, and it may be of interest to learn that solutions made after the formulas given by him have been injected into the veins of patients, and that some striking results were witnessed, in the way of symptomatic cures on the one hand, but of disasters, on the other. Of these facts I have personal knowledge. I can say, for one thing, that, although quite severe for a few hours, the reactions from the large doses of salicylates and guaiacol advised sometimes produce results quite satisfactory to the patient, as well as to the physician. However, these large doses must be employed with extreme caution and only when the patient may be under the constant observation of the physician for full twenty-four hours. And this brings up the question of the advisability of using such large doses of these two drugs, when the same results can be secured by the smaller dose, more frequently repeated.

For the past four years, I have been using a solution that contains 5 grains of sodium salicylate in each 5 Cc. of my favorite solution, besides the creosote, calcium, phosphorus, iron, magnesium, sodium, and potassium, and the results have been uniformly satisfactory. In all cases where mercury is indicated, I add to the dose, mercuric chloride, 1-50 to 1-30 of a grain.

In cases where arsenic is indicated, including syphilitic infections, I add cacodylate of sodium, in doses of from 3 to 12 grains. Neuritis, certain skin diseases, neurasthenias, and anemias often respond to the cacodylate in a remarkable manner. But by far the greatest wonder-worker in early tuberculous conditions, tertiary lesions, bronchitis, asthma, glandular troubles, and pneumonia, not to mention others, is the combination of iodine (in the form of a 5-percent glycerin of iodine) with the solution of sodium, potassium, and calcium, salicylates, and the rest.

Sodium salicylate is an antacid, and may be used successfully in many conditions other than rheumatism, where there is a reduced systemic alkalinity, as well as to acid patients, who, according to Duncan, constitute nearly 50 percent of our chronics. Sodium salicylate at first increases the red blood-corpuscles and decreases the number of the white; but, if continued too long, produces exactly the opposite effect. In full doses, it often produces depression, and for this reason should be administered with caffeine.

I myself use a sterile solution containing 4 grains of sodium salicylate, and 2 grains of caffeine in 2 Cc. of double-distilled and sterilized water. I seal the solution in ampules, so that there is no danger of contamination; and it keeps indefinitely. I administer from 1 to 3 ampulefuls at a treatment, and in acute conditions repeat the dose after eight hours, unless improvement sets in before the expiration of this interval. Where systemic improvement is indicated, I frequently add 1 or 2 ampulefuls to the solution mentioned above, bringing the dose up to 12 or

15 grains of the sodium salicylate, and observe no unpleasant reaction.

The "soluble" iodine, as prepared by resublimation and held in solution in sterile glycerin, in the proportion of 5 percent, is the ideal way of employing iodine wherever indicated. I administer it in doses of from 3 to 30 minims of this glycerin-solution, adding normal saline solution when giving the larger doses, in order to make up a larger bulk for diluting the iodine.

I could report a hundred cases in which the patients have been symptomatically cured or greatly benefited by means of intravenous medication after all other methods have failed. We often fail in the administration of drugs by mouth because the condition in the stomach is such that the drugs are changed to insoluble substances that are not assimilated.

The technic of making the injections is comparatively simple, and experience teaches one to tell, largely by the sense of touch, when the point has entered the vein. Any physician first taking up intravenous medication would do well to get in touch with one familiar and experienced with the work and spend a day or two as a pupil. It gives one confidence; and, if the first two or three injections are given under the direction of a competent man, it saves trouble and anxiety, for, in administering remedies intravenously, care must be exercised not to get the solution into the tissues surrounding the veins. All these solutions are alkaline, and if the solution gets into the tissues there results a slough like that caused by caustic-alkali, which is slow to heal, and it generally is impossible to get the patient to submit to further treatment.

One hesitates to name the large number of disease-conditions that have responded to intravenous treatment, as the criticism of laying claim to a cure-all is likely to be made. Many chronic conditions are due to the same cause—defective elimination or the presence of some toxin; and the solution containing sodium salicylate, iron, potassium, sodium, magnesium and calcium, with creosote, arsenic, mercury, iodine, or nuclein, as indicated, clears up the condition and restores normal functioning of the organs, terminating in recovery of health.

A careful analysis of a series of cases showed increase in the number of red blood-corpuscles, a filling up of the shrunken ones, a decrease in the excess of the white cells, an increase in the hemoglobin showing, and a permanent rise in the blood pressure in anemic and pretuberculous conditions; thus proving the solution to be a blood-builder, while also increasing its volume.

W. F. Fowler.

Kalamazoo, Mich.

ANNUAL MEETING OF THE AMERICAN MEDICAL EDITORS' ASSOCIATION

The annual meeting of this Association will be held at the McAlpin Hotel, New York City, on October 18 and 19, under the presidency of H. Edwin Lewis, M. D., editor of *American Medicine*. A most interesting literary program has been prepared upon important subjects of particular interest to every medical editor in this country.

Coming at a time when clinics and operative work are in full swing, an unusual opportunity will be afforded to those members who desire to observe clinical work, and for those who are interested in the business side, a more propitious time and place could not be selected.

The annual banquet will be held at the McAlpin Hotel on the evening of October 19. These delightful occasions of the American Medical Editors' Association are events long to be remembered, and the local committee assure us that this banquet on the evening of October 19 will exceed all previous efforts.

INTRAVENOUS USE OF ARSENIC IN TUBERCULOSIS

While reading the article in the August issue of Clinical Medicine, on the treatment of rheumatism and tuberculosis, I am reminded that I wrote to Dr. Karl von Ruck during the year 1896, suggesting that he try arsenates of sodium or strychnine, hypodermically, for tuberculosis. However, the Doctor was so well satisfied with tuberculin, which he was using, that he would not try anything else. If you can get someone to try that preparation intravenously and watch its effect on the leukocytes, I believe he will find the results to be more favorable than secured from some other things now in use. This, in connection with one of the recent iodine preparations, such as ideol, it seems to me, would constitute a good combination. They could be given intramuscularly as well as intravenously. The arsenate of sodium should be given in increasing doses, up to the equivalent of 35 or 40 drops of Fowler's solution, three times daily.

Wm. A. Hammond has reported some cases of chorea which yielded to the hypodermic use of arsenate of sodium, in increasing doses,

which failed to yield to Fowler's solution given by mouth. Besides, the physiological effect of arsenic passed off after suspending the use of the Fowler's solution and using the sodium arsenate instead. The patients could tolerate much larger doses of the latter. Some cases were reported some twenty-five or thirty years ago, when Metchnikoff's theory was not yet promulgated.

I have an idea that leukocytosis and the general metabolic processes would be greatly stimulated by the use of arsenic and strychnine hypodermically. I have not been so situated that I could make a practical test as suggested, as I should have to have constant supervision of the patient to do so. If you think it worth while, perhaps you will have this test made. I would suggest that the relative effects, intravenously and intramuscularly, be ascertained.

The above might best be used with normal salt-solution, even when given intramuscularly. I suspect that a great deal of the benefit of the intravenous salicylic-acid treatment is owing to the salt-solution.

J. M. PINKSTON.

Little York, Ind.

[Would not sodium cocodylate provide a good form for the administration of the arsenic? This salt is very soluble and is much used subcutaneously.—ED.]

EMETINE IN AMEBIC DYSENTERY. SMALL BABIES

I wish to report an interesting case of amebic dysentery treated with emetine hydrochloride. When called to see a Miss B., on April 23, 1914, I found a woman of about 40, suffering from a chronic diarrhea. I think she was just about the thinnest person I have ever seen. The history given me was, that she came from an adjoining county, and that she had had this trouble for over two years and had been under the care of several physicians. The discharges were of a thin, pea-soup character, and numbered from twenty to twenty-five a day, and were quite offensive.

Suspecting amebic dysentery, I put her on emetine hydrochloride twice a week. I gave her, in all, 15 doses, and she made a rapid recovery. She has remained well ever since, and has gained 40 pounds in weight.

I see in the current number a list of small babies, and wish to report about one born here in 1906. On February 4 of that year, I was called to deliver a woman who was in the last stages of consumption, and the girl baby born weighed 1 1-2 pounds. The mother herself weighed only 70 pounds, and she died a few days after the delivery.

I worked over the child for about twenty minutes, and, as it did not cry, gave it up, as the mother needed my attention. I wrapped the baby in a blanket and put it in a very warm place, then helped the nurse in taking care of the mother. After the child had been left for a while, it made some feeble sounds, whereupon we took it up again. They fed it with a medicine-dropper for several weeks. The last time I saw it, the child weighed 30 pounds and was 30 inches tall, being then 6 years old, and it was one of the dearest, brightest little chatterboxes I have ever seen.

J. MANSON.

Lincoln, Cal.

EMETINE IN TUBERCULOSIS

I have read your editorial, in the September number of CLINICAL MEDICINE, on "Emetine Employed in Tuberculosis," and have become much interested. There is one thing I conceive would make Doctor Tatchell's method almost impracticable, and that is the use of the hypodermic method. Of course, hypodermics can be used in acute attacks of hemorrhage, but the use of 1 or even 1-3 grain of emetine every day, hypodermically, would seem almost impracticable, unless administered in a hospital where patients can not well object.

Now, what I should like to know is, Can emetine be given three times a day by the mouth and obviate this constant pricking of the skin with the needle, and, yet, with a fair show of getting systemic impression? I am speaking principally of the pain and inconvenience of the hypodermic method. Is the oral route practicable? If not, the suggestion will lose its force.

C. L. MYERS.

Covington, Ind.

[The hypodermic method of administering emetine is the one to be preferred, for a number of reasons. One of the most important is, that, when the alkaloid is given by this route, the patient is compelled to keep constantly in touch with the physician, who, as a result, not only has the advantage coming from personal observation of the results of this treatment, but also is placed in a better position for keeping watch of the diet, clothing, exercise, and habits of the patient,

and better prepared for the complications, big or little, which need to be watched so closely.

Only when the drug is administered hypodermatically can the physician be sure of the exact amount actually present in the patient's body. We never know what becomes of medicine administered by the mouth. It may be absorbed, and it may be passed through the bowel unchanged. Also, emetine is a gastrointestinal irritant, not infrequently causing nausea and vomiting and quite often diarrhea; and it is important that the function of the alimentary canal of every tuberculous patient be kept intact.

We do not advise continuing the emetine injections indefinitely. A course of treatment lasting a week or thereabouts may properly be alternated with a course of medication lasting two or three weeks in which nuclein, guaiacol or creosote, codliver-oil, calcium sulphide, tuberculin or other indicated remedies may be employed. But it is just as easy to give the patient a course of hypodermatic injections of emetine as it is to treat him with tuberculin.

Doctor Tatchell began treatment with 1-3-grain doses, increasing to 1 grain daily. Raeburn, who was one of the first to try emetine in tuberculosis, and who regards the drug as an exceedingly valuable decongestant for the treatment of early phthisis, gave it in smaller doses. Our suggestion would be to begin with 1-3 to 1-2 grain daily, hypodermatically, dividing the dose between morning and evening, and gradually increasing.

We hope some of our readers will try the method. As yet it is, practically, untried, but the few reports thus far received warrant further work along this line. Used in the dosage recommended, it can do no harm, the only inconvenience being occasional complaints of slight transient pain at the seat of injection. When thus used, in the smaller divided dosage, the discomfort is usually inconsiderable. See abstract of Doctor Lyons' article, page 948.—Ed.]

EMETINE CURATIVE IN FOUR CASES OF TYPHOID FEVER

In the last six weeks I have treated 4 cases of fever, in all of which the clinical typhoid features were present. Large doses of quinine during four or five days had failed to control the fever in these patients, whereupon the quinine was stopped and 1-2-grain doses of emetine were given twice daily. The temperature became normal within from three to five days.

I believe that emetine, administered hypodermically, will control typhoid fever, or, in other words, abort an attack during the first eight or ten days. Everyone of these four patients had tympany, abdominal soreness, and gradually ascending temperature, in spite of 10-grain doses of quinine sulphate night and morning. Three of them had nosebleed; in one, there was blood in the stools. Under any other plan of treatment, I should have expected to see them have a three weeks' siege at least.

J. S. Carriger.

Chelsea, Okla.

[Please read the editorial on this subject, printed on page 894, this issue.—Ed.]

EMETINE IN MENORRHAGIA. PYORRHEA

Thinking that others might be interested in a case which I have dismissed today as cured, I shall go into detail as to the manner in which the case was handled.

Miss A. L., age 14, American, began menstruating for the first time on July 4. She attended the Independence-Day celebration, and was caught in the rain. That evening she had severe pain in the back and down the limbs, with cessation of the menstrual flow. The parents did not know the girl had commenced menstruating, so nothing was thought of the matter, and consequently nothing was done. On August 26 she menstruated again, and the flow continued until September 9, when I was consulted. At that time the patient was still flowing heavily, completely saturating five or six napkins daily. She had pain in the back and down limbs.

I gave ergotin, gr. 1-2, and hydrastin, gr. 1-5, every two hours, with instructions to keep the patient off her feet. There was no change for the better during the next two days. Therefore, on September 11, in the evening, I gave her 1-2 grain of emetine hydrochloride hypodermically; with ergotin, gr. 1, hydrastin, gr. 1-2, and gallic acid, grs. 3, by the mouth. I also instituted vaginal douching, as follows: hot water, as hot as could be borne, for three minutes; ice water, half a minute—using 3 quarts of hot water, and ice water q. s. On the 12th I gave two hypodermics of emetine hydrochloride, i. e., one morning and evening.

On the 13th the flow had slackened perceptibly, but the treatment was continued as on the previous day. On the morning of the

14th the flow had almost ceased, but I gave the emetine as before, and continued the other treatment. By evening the flow had stopped entirely, so I did not repeat the emetine.

The patient was kept in bed during all this treatment, and although I dismissed the case on the morning of the 15th, as she was feeling perfectly well, except for being a little weak, I ordered her to remain in bed that day, and to sit up the next, walking about the house on the third day, and, if nothing more occurred, returning to school on the 20th.

While I am well aware that this single case does not prove anything, yet I give it as a suggestion; and if others have had any experience with emetine hydrochloride in such cases, I should like to hear from them. I might have had the same results had I not used the emetine, but we know that emetine controls hemorrhage from other organs of the body, so why not from the uterus?

I have been using emetine hydrochloride during the past year in the cases of pyorrhea which have come to me, with most satisfactory results. A few weeks ago a boy of 17 came to consult me, whose gums were a mass of spongy, bleeding, necrotic flesh. They were the worst I have ever seen, and I have seen *some!* I gave him a hypodermic of emetine hydrochloride, and sent him away with a good tooth paste and instructions to wash the teeth after each meal, and to come back in three days.

The boy lives 12 miles out in the country, and could not come regularly, as it was harvest time and they were very busy. He had four treatments, ranging over ten days, and the gums when he discontinued treatment were in a normal condition. I did not dismiss the case, but he stopped coming. I instructed him to go to the dentist and have his teeth cleaned, which, up to this time, he has not done. Then he was to continue the emetine treatment for a while longer.

My other cases, while not so brilliant, have made most satisfactory recoveries. In most of these cases I have had the patient use boremetine as a wash, giving the emetine hydrochloride hypodermically.

F. E. Braucht.

Coleridge, Nebr.

STRIKING RESULTS FROM EMETINE IN DIVERSE HEMORRHAGES

One hardly can pick up a medical journal without finding in it something about emetine as a curative agent. My own experiences with this alkaloid have not been many, but they are of a nature to give me a certain amount of confidence as to its therapeutic value. Ipecac root was used quite extensively by previous generations, but latterly has rather been ignored, until recently restored to favor, in the form of emetine, its principal active constituent. One objection to its extensive use may be the high cost; but, this should be overlooked if, in any serious trouble, it is practically a specific, or when we wish to use it in emergencies. The extent it now is being prescribed among us, and even more so in Europe, speaks for its value.

Case 1. The first time that I used emetine was in a case of chronic dysentery of at least five or six years' standing. I made no microscopic examination as to whether it was of the amebic type or not, but, according to the final results, I take for granted that it was. I gave 1-2 grain of the alkaloid hypodermically every third day until ten doses were given; then another such course of ten doses every fifth or sixth day. The man is entirely cured, having had no diarrhea and no blood in the stools for about one year.

Case 2. A man about 25 years of age came into my office at 7 o'clock in the evening, bringing with him a pint of urine colored red from blood. I gave him a hypodermic injection of 2-3 of a grain of emetine, told him to go home (1-8 mile) and immediately void into a bottle all the urine in his bladder, to serve as a guide, and then at 9 o'clock to empty his bladder again, put that in another bottle, and then send me the two specimens. He did so. Specimen No. 1 was bright-red, that passed one and one-half hours later was absolutely free from discoloration.

Case 3. A man afflicted with diabetes had had, when consulting me, renal hemorrhage about every third day for some two weeks. Emetine-injections always have arrested these attacks and he has had but one very insignificant hemorrhage for the last four weeks.

Case 4. I was called to a lady who had had a tooth extracted three hours previously, and half an hour before I was called an artery in the socket started bleeding, and she had lost about one quart of blood. I gave her 1-2 grain of emetine hypodermically, whereupon the bleeding ceased in about three minutes. The same result would, of course, have been impossible in the case of a larger artery.

Case 5. This was an instance of intestinal hemorrhage in typhoid fever. The first

time it occurred, about one quart of blood was lost in bed, with, no doubt, more blood remaining in the bowel. I gave, at once, 1-2 grain of emetine, hypodermically, every five minutes, for four doses. However, the hemorrhage stopped with the second dose, and the two after that were to make doubly sure. This amount (2 grains in twenty minutes) caused vomiting. Of course, ulceration continuing, resulted in two more attacks of hemorrhage, but emetine arrested the flow each time; although, eventually, the patient did succumb.

Case 6. Pyorrhea, where the four lower incisors were very loose, the gums retracted, and much filth, discharge, and bad smell. The patient received four treatments, both local and hypodermic, with emetine, and results were good, the discharge stopping, and the teeth fastening considerably right after the treatment; however, the person has not showed up since.

JOHN A. WEIERBACH.

Quakertown, Pa.

METHOD OF USING EMETINE IN PSORIASIS, AND, THE RESULTS

I have employed emetine hydrochloride in the treatment of psoriasis, both hypodermically and intramuscularly, and have obtained in this affection the best results by the latter method. The site for the intramuscular injection selected by me has been the deltoid muscle. First the skin is painted with tincture of iodine, and then, after a few minutes, the excess is washed off with alcohol. Next, the emetine, 1-2 grain in sterile solution, is drawn into an ordinary Luer syringe having a 5-8-inch needle. The needle is thrust quickly into the muscle and the solution slowly expelled into the tissues; then, withdrawing the needle, gentle massage is applied for a minute or so over the injected area. Hardly any pain will be felt, nor any discomfort subsequently. This treatment is given once a week for two consecutive weeks, thereafter twice a week. After administering six or seven injections, if there is no improvement, allow an interval of two weeks to elapse, then repeat the treatment.

Cases of psoriasis in which this treatment proves effective are found to be associated with pyorrhea, and in proportion as the skin lesion clears away, the pyorrhea also improves. Here are four cases that illustrate this fact:

Case 1. Mrs. B. Had psoriasis for eight years. Was treated with various local applications, but had only slightly improved and always had relapses. I gave her seven emetine injections and then waited two weeks, at the end of which time the lesions began to fade. I gave two more injections, when the patient had to leave the city for one month. When she returned, her skin was clearer and showed no traces of the former eruption. No other medication was used. The patient had pyorrhea, which also greatly improved.

Case 2. Mr. E. Had psoriasis for twelve years. He showed no signs of pyorrhea. He received 14 injections of emetine, but the psoriasis did not yield.

Case 3. Mrs. T. Had psoriasis for two years, also showed pyorrhea. She received 9 injections of emetine, and has improved a great deal, the lesions fading but not entirely gone. I am still continuing treatment.

Case 4. Miss F. Has had psoriasis for five years. Shows no signs of pyorrhea. She has received 16 injections of emetine, but the lesions remain about the same.

Conclusions.—Many cases of psoriasis are associated with pyorrhea, and under emetine treatment the psoriasis disappears as the pyorrhea improves. In the other cases, those without pyorrhea, the psoriasis is associated with some other condition, one that is not affected by emetine. Thus it seems that often psoriasis is due to pyorrhea, which constitutes an etiological factor.

NOEL H. W. CAMPBELL.

New York, N. Y.

[Doctor Campbell does not inject the emetine quite as frequently as most physicians. Usually the 1-2 grain dose is administered at least two or three times a week at the beginning of treatment—sometimes daily. But the doctor's results were good.—ED.]

CURING SEASICKNESS

The writer was much interested in the article on seasickness, in the August number of the CLINIC, concerning the manner and method for its treatment. Whatever may be the cause of seasickness, what the sufferer wants most to know about it is, What is the most effective treatment for this distressing affliction, which one victim once said caused him during the first half hour to fear that he would die, and the next half hour, that he wouldn't die?

The writer on one occasion experienced carsickness, and he found that munching some popped corn relieved the trouble. Subsequently he found that the same simple remedy

afforded relief in seasickness, also. An occasional small sip of brandy sometimes will give relief.

As to the causation of the trouble, the writer is of the opinion that it is caused by the alternate rising and sudden dropping of the bow of the vessel, and he has found by personal experience that by taking a position as near midship as possible on a steamer or vessel, and closing the eyes, one is less liable to become sick. The sensation caused by the rising and dropping of the bow and stern of a steamer is much the same as that experienced by many persons in a swing.

Whether this naupathic condition is due to "irritation of the vestibular apparatus" or to "irritation of the center in the cerebrum," is a problem that remains open for solution. It reminds the writer of an explanation given by a classmate to his preceptor. The young gentleman had indulged too freely in a bout with Johnnie Barleycorn, and, being called to an account, he explained the matter by saying that the "molecular polarity of his cerebrum became slightly out of equilibrium."

GEO. D. STANTON.

Stonington, Conn.

CAUSE AND PREVENTION OF SEASICKNESS

The article on seasickness appearing in CLINICAL MEDICINE for August prompts the writer to give his experience with that trouble, together with a few brief remarks regarding what appears to be a plausible theory of its cause and a means of prevention.

The writer and another young man boarded a steamer at Sandusky, Ohio, for Put-in-Bay, Lake Erie, with a high wind blowing and the sea choppy. Both of us located ourselves at the forward end of the boat, the writer with his chair slightly tilted and feet on the railing; but not for long, for, when the boat left the bay for the open lake, it started to pitch and roll, and soon nausea overtook us in unmistakable signs, the writer's feet at the same time coming down from the railing while the chair was precipitously allowed the legitimate use of its four legs. About the time a sickly pallor was coming over us twain and a rising movement of things internal was only a question of seconds, a brisk, cheery nurse—who had been seasoned by several trips across the Atlantic—administered the antidote, this being of an active nature, rather than a passive one.

Taking us both by the arm, we were given a number of brisk turns about the boat, the writer keeping his gaze off in the distance, where association of movement could be had. We were both recovering nicely from the first shock of sickness, when my unfortunate friend, who had halted for a moment at the side rail of the boat, received the involuntary dietary outpourings of a brother in misery whom fate had placed just above him on the upper deck. Following this mishap, there was no more sickness on the part of either of us, and in an hour's time we braved seats at the stern of the boat, tilted back against the cabin, and enjoyed the same rolling of the ship that had made us sick before.

Both physiological and psychical elements may be suggested as the two causes of seasickness, and for its prevention the writer herewith suggests an active treatment of a mechanical nature.

Granting that there is a sensitized nervous system as a psychical cause (which is a factor in many phases of life), we will pass on to the physiological aspect.

There is a confusion of the centers of equilibration. The moving vessel causes us to lose our sense of adjustment in our position in space. The phenomenon of habit receives its jolt in the body-function of sustaining this coordination. False visual and muscle messages are sent to the cerebellum for its interpretation. These centers of equilibration at the same time are rendered conscious of disturbances in the semicircular canals from the internal ear. These impressions from the auditory nerve-endings suspend the body-movement's recognition of the three dimensions of space. The vomiting-center participates in this mental confusion of incoordination. Dizziness and the rest of the phenomena of seasickness rapidly follow. The psychic element aids in this precipitation, by the reflex action of the sensitized sympathetic system.

So in locomotor ataxia, with its permanent disturbance of equilibration, we have gastric crisis, with vomiting.

In the prevention of this temporary disturbance, the visual and the labyrinthic messages to the brain must be controlled so as to approach the normal. The writer seeks to do this by actively employing the organs of vision, keeping the eyes open and looking away in the distance, at the horizon where motion is lost. By so doing, he becomes conscious of where the movement is and where it is not. The visual impulses, recognizing the fault, meet the new condition.

The active walking minimizes the muscular and labyrinthic disturbances, through the

brief moment when one foot is on the heaving vessel. The impressions hardly are registered before this foot is lifted and the other takes its place. This momentary approach to earth (the deck) allows the natural return of our sense of adjustment.

To be absolutely in space, would mean only a return of the seasickness when coming into contact with the vessel again. But, as it is, the walking helps us to acquire an immunity while the first shock of our sudden and altered sense of motion wears off and our body has time to adapt itself to new conditions.

H. A. GREENWALD.

Kettle Falls, Wash.

MORE ABOUT SCRATCHES IN HORSES

Since the subject of "scratches" has been commented upon by our esteemed Doctor Mayo, it is with some hesitancy that I touch upon the subject. I, too, have an animal affected with this, as I regard it, parasitic disease. I have tried many things, but find that, in addition to the general measures referred to in the August number, a 3-4 to 1-percent ointment of mercuric chloride, thoroughly rubbed into the "crack" on alternate days, gives best results.

The reaction is severe enough to cause some tenderness on the second day, but by the third day this has subsided and the sore is ready for another application. The crusts soon fall off and the lesions heal with a pliable scar.

Recurrence is the rule, but by attacking the lesions when they are small the animal may be kept practically free.

The only objection to its use—and this applies particularly to the solution of the mercuric bichloride—is, that, when allowed to run over the hoof, it causes a dryness and brittleness of the same.

W. W. KUNTZ.

Baylis, Ill.

ADHERENT PREPUCE: A SURPRISE

For the benefit of others, and especially the child, and in response to the invitation in CLINICAL MEDICINE to write "one practical item," I will give my discovery of an efficient treatment for adherent prepuce.

It has been stated by some authorities, I have been told, that adherent prepuce is the normal condition of the child, as born. I do not believe this, for, if true, it would give trouble more often than it does. Still, it is not infrequently met with, more or less complete. I have pulled off partial adhesion a number of times.

In the case to be related, the prepuce was *completely* adherent to 1-16 of an inch of the meatus, and *all the way around*. It resisted every effort to peel. It caused the child much discomfort and induced a habit of its standing upon its knees, sudden crying-out and disturbance of sleep, and so on. I could find nothing in the textbooks covering the condition for treatment, and so made an appointment, with the intention of dissecting it back with the bistoury.

Before dismissing the mother and child (age 2 years), the thought of forcibly distending the prepuce occurred to me. I filled a strong 4-ounce syringe with water and, holding the prepuce tight about the point of syringe, injected the water, thus ballooning the foreskin. To my pleasant surprise, I found the glans stripped clean of the mucous lining, clear back over the corona—"as clean as an onion." Considerable hardened smegma was liberated. Then I felt surprise that none of the textbooks nor any of my many preceptors had mentioned this simple and efficient cure.

I had intended also to circumcise this child. And right here and now I will say, the corona glandis should never be left to go uncovered by a circumcision.

H. L. GREEN.

Quincy, Ill.

A PRESCRIPTION FOR EPISTAXIS—AND FOR APHASIA

On page 766 of August CLINICAL MEDICINE, Dr. C. C. Matthews gives a prescription for epistaxis, and the editor asks, "Has anyone else anything to suggest?" In my practice of half a century, I have found that fluid extract of ergot will arrest the bleeding in a short time. But here is another use for fluid extract of ergot that may be of interest.

Some twenty years ago, I was called to see a man 72 years of age. He had got up that morning with aphasia. He could answer yes or no, but no more. Supposing there was hyperemia of the speech-center, as described by Broca, I concluded that a few doses of the ergot (30 to 40 drops of the fluid extract every three or four hours) might relieve it, by contracting the arterioles. So, I applied practice to theory. On my return visit the next day, I found my patient's faculty of speech fully restored, and the old man could talk. He said: "Doctor, after I took the third dose of your medicine it appeared as if

a sheet were raised upward from my head—in front of my eyes—when I discovered I could talk as well as ever."

He lived several years after that without a return of the aphasia. Question: Was this a case of vis medicatrix naturæ, or the direct effect of the ergot? Belonging, as I do, to the "old régime," I am inclined to stick to the efficacy of pure drugs, more than to the *illi dixerunt.*

'Rah, for CLINICAL MEDICINE.

L. H. HILL.

Germanton, N. C.

[Was the result obtained an illustration of nice adaptation of the exact remedy needed to correct a definite disordered function—or just luck? Who can answer? On theoretic grounds the Doctor's therapy was all right.

In hemorrhages I hope no one will forget the value of emetine. It is not the only remedy, but it seems to "work" in many instances where other things fail, hence is a good thing to have on hand.—ED.]

BUSINESS TALKS TO BE CONTINUED

Some months ago we began the publication of a series of articles by Mr. A. D. Brush, on "The Keystone of Success—Collections," following with a number of contributions from members of the "family," and incidentally opening up the whole problem of charges and collections for further inquiry.

We are planning now a continuation of this series. In the November issue we shall publish an article giving a resumé of the experience of some of our contributors and embodying some of the best collection letters which have come to our attention. If any reader of CLINICAL MEDICINE wants to get in on this discussion, now is the time to do so. Everyone is invited to take part in it. The subject is one of extraordinary interest, and it is hoped that a question of such vital concern to the doctor's pocketbook will stimulate many of our readers to "sit right down and do it now."

TWENTY-FIVE YEARS OF URINATING THROUGH THE CATHETER

In a lifetime of nearly eighty years, mostly spent among the sick and afflicted, one runs upon things occasionally a little out of the common, as in the case of a man who died in his 81st year, and who during twenty-five years of that period had catheterized himself, never having passed a drop of water normally in all that time. I was intimately acquainted with him and know whereof I speak. This man used the Jaynes catheter, and would have no other, even though in later years, as they are not manufactured or much used in America, he had them imported especially for his use, despite the fact that they cost more than double those he could get here. He had a way of his own invention for heating vaseline to the boiling-point and then passing the catheter through it before introducing. Yet, I do not know of his sterilizing his hands more than with the hot vaseline; still, he was more than an ordinarily clean man. As I have never known a man using a catheter for longer than from three to eight years, it has occurred to me that his case might be worth mentioning.

Here is another story:

A young mother with a small babe had a cancer on the end of her nose, which greatly annoyed her, while by no kind of treatment had she been benefited. At last someone told her to sop the nose with oil of turpentine. This she did often, hoping for a cure, but, instead, both mother and child were suddenly taken ill and died in a few hours, in spite of all that could be done for them. Question: Did the oil of turpentine cause their death?

C. M. H. WRIGHT.

Blaine, Ill.

THE CHIGO OF SPANISH AMERICA

Pulex penetrans, commonly called the "jigger" and "chigger," is a small black flea inhabiting sandy soil in Spanish America. It becomes of medical interest, in that it enters the sole of the foot, preferably about the toes, under the skin, and particularly under the toe-nail. The entry is made, apparently, without giving pain, or at least not noticeably so, to the victim. It is not the same as the little red jigger of the United States, which only attaches itself to the skin, preferably to the softer and thinner parts. Among the Spanish-Americans this little flea is known as "pulga de la pies," but is also called "nigus" by some writers. It abounds, and is a pest, from Mexico southward to the tropic of capricorn.

I was "lucky" enough to get just one in my foot during my visit to Gautemala City. I was told by the natives that this insect abounds particularly where hogs are kept. I made several visits to the hog-market, which, as a matter of fact, is the grounds around and about the Catholic church. The natives

use the churches and the grounds about them for camping-places, water-closets (without the water or the closet, either), selling and buying, and other utility purposes. So, I think, there is where I met the "jigger," and he made friends with my foot.

One night, while in bed, I placed my foot against the "footboard," when I felt a pain of a peculiar hot, throbbing character, not sharp nor much sore; I never had felt just that kind of a combination of sensations in all my life. I told my wife I had a jigger in my foot. Next morning I took a very small scoop-curette from my eye-case of instruments and emptied the cavity of its contents. The latter I put under the microscope, and there were revealed 31 eggs. These were ovoid in shape, both ends the same size, and looked like lizard's eggs.

I filled the cavity in the foot with carbolic acid, put on my sock and shoe, walked all day, and never felt it again. This constitutes the treatment. The natives pick out the nest, and apply nothing to the pocket; in fact, the wound is comparatively harmless. If the eggs are not removed in due time, however, the leg gets knotty to the knee and gives some trouble.

I wish to state that I received many letters from the readers of CLINICAL MEDICINE asking about locations and many other things in regard to the country. It was impossible for me to answer them from lack of time and also on account of my inability to convey to the writers a pen-picture that would give them what they desired. Anyone who has a fascination for the American tropics and has never seen them, had better go and look for himself. I trust no one will think he was ignored for possible other reasons.

T. H. STANDLEE.

Edgewood, Texas.

DISEASE GERMS AS INSTRUMENTS OF WAR

CLINICAL MEDICINE always, at least ever since I have known it, has stood for the right in everything, and especially in things of vital interest to the medical profession. Now, there is one matter, of importance to us all, that I am sure should receive some attention in the journal.

I have just read an editorial in *The Louisville Courier-Journal*, to the effect that a Mr. Steinmetz of the General Electric Company, Dr. W. H. Park, director of municipal laboratories, New York, and Dr. Charles Norris, with Dr. Cyrus Field of Bellevue, are advocating the use of airships and other engines of war to spread the organisms causing dysentery and the bubonic plague among the men of an opposing army.

Mr. Steinmetz is a layman and should be looked after by the lay press; but these other gentlemen are within the ranks of the noblest profession on earth, and this profession should have something to say to them as to what it stands for.

When did the medical man change his role as a humanitarian for that of a heinous, horrible, nauseating monster, bent upon spreading pestilence and suffering and death? Science already has lent itself altogether too much to works of destruction—a sad fact proving that man is not yet fit to handle the secrets he has wrested from nature. Better had these men remained totally ignorant of the hidden forces of bacterial life, if this knowledge so overbalances their equilibrium as to turn it against humanity.

The fruits of a tree determine its fitness to live, and, if the medical profession is to lend itself to this twentieth-century nightmare, it had better perish off the face of the earth quickly ere all its boasted triumphs are turned to hellish curses.

Men whose lives have been spent perfecting ghastly monsters of destruction are now building their monument of putrid human flesh that cries to heaven; and it is hoped they will be pointed to with the deepest loathing by the generations to come. Jack-the-Ripper seems angelic compared with those men dishonoring their guild who would use in war forces giving no one—nor man, nor woman, nor child—even a chance for life.

Medical men have stood as a unit in bending all their energies to the discovery of ways and means of staying the hand of death and alleviating suffering. I should say now that the medical profession had better heed the handwriting on the wall if it wishes to maintain its sacred creed and prevent its noble emblem from becoming a mere farce, a gewgaw, a despicable byword.

Knowledge, as everything else in nature, is a two-edged sword, and any man who cannot, in thought, put himself in another's shoes is not fit to hold the powers of life and death in his hands.

I have heard it said that in this country money is the Moloch to whom we sacrifice. We toss children, virginity, the strength of youth into its maw; yet, this monster is never satisfied. And now it makes a bid for our beloved profession, which has robbed even the ghastly battlefield of some of its horrors.

I am but one doctor in a small Indiana town, but I sincerely hope that my voice will be heard. I am sure that the vastly greatest proportion of my brethren feel as I do about this matter, if they have not already spoken.

There is high-tension madness in the air, and it will be well for us to keep ourselves properly insulated.

LEON E. WHETSELL.

Bloomington, Ind.

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[We print Doctor Whetsell's letter mainly, because we wish to reassure him and such other of our readers as may have been influenced by articles like that printed in *The Courier-Journal*. The article itself we have not seen and do not know just how much inhumanity was charged up against Steinmetz, Park, Norris, and Field; but we do know Doctor Park personally, and, knowing him, can say without hesitation that the editorial quoted is a tissue of absurdities, no doubt based upon a distortion of something these gentlemen actually said. It cannot be credited that they would endorse such an awful method of warfare as that suggested. The nation undertaking it would be branded forever with the loathing and hatred of the world.

However, we agree with Doctor Whetsell that "there is high-tension madness in the air"; therefore, it behooves us all, whatever our racial affiliations and sympathies, when considering the war, to think temperately, and to speak calmly, without rancor and without prejudice; remembering that there still is abiding in the world a brotherhood of mankind more precious and more enduring than that of blood or nation, and *this* should be cultivated. No people engaged in it have a monopoly of either the good or the evil; none of the armies is composed exclusively of devils or angels; and after this great war is over, we shall all have to live together in this same little world. For that happier time, let us all strive to keep burning the flickering flame of brotherly love, working to this end *right now*.—ED.]

CURRENT COMMENT BY A COUNTRY DOCTOR

The Practitioner as a Pharmacist.—Whether or not it is to the advantage of the physician to dispense his own remedies, will not here be treated of. This question must be decided by the individual practitioner according to personal convenience and economic environment.

Personally, the writer would prefer merely to write prescriptions, handling only emergency necessities; however, his own convenience as well as that of his clientele requires just the opposite: he is the only available source of drug supply, and his methods in this respect are in no way modified by the fact of his being a duly registered pharmacist, unless it be that he possesses a strong realization that the pharmacist is worthy of his hire.

Probably no error is a greater one on the part of the physician than to suppose that the pharmaceutical end of his business is a mere necessary side-line. This feeling results in his wrapping up medicine in a piece of newspaper, in failing to record properly what is given to a patient, not only in observance of the antinarcotic law, but for one's own convenience and completeness of record. This feeling leads to the habit of washing out a dirty bottle before the patient, slopping in a guessed portion of medicinal agents, and improvising a menstruum—often from the water-bucket. One of the late Bill Nye's stories treated of the unforgiveable sin of pouring water into the populace's whisky after the supply had gotten low because of a snowstorm; Wyoming's crude and frontier-environed proletariat could stand everything but this.

Of a truth, the water-bucket proposition is not a joke. Old Bill Z. knows nothing of the expense of a minute quantity of an alkaloid; neither original outlay nor expense of having your money thus tied up in a colored-water and an airtight container—not to mention the cost of the knowledge of how to dispense it. But, Bill is thoroughly "wise to" that water-bucket. In fact, Bill raised the genuine circulating medium and went to town to a distinguished specialist to have his wife's sister treated for increased ocular tension, and she received the same medicine at a first-class pharmacy. It was put up secundum artem and properly clothed, incidentally worth the price. Yours was worth the same amount, *but*, you just put in a tablet (weight correct and alkaloidal salt pure), then you proceeded to the water-bucket and afterward put in and shook up an approximation of boric acid (having let your bottle of saturated solution of H_3Bo_3 run empty), thus making a well-indicated "eyewater." The label was a bit off in appearance and the directions were carelessly written. That is the kind of prescription that "doc" put up; it was poorly dressed all around and could not compare with the

"collyrium" the city doctor gave a recipe for. The difference was in clothes; the collyrium was properly arrayed; but the eyewater was not.

Both these preparations may have been of equal efficiency, but the eyewater lacked something: it was short the psychological touch that gave it, besides enhanced therapeutic excellence, a marketable value, instead of being a dead expense to the prescriber. The inherent difference was not in the prescribers; both had the same ability derived from the same sources. The difference was not in brain-power of the physicians; both knew that eserine and pilocarpine were their main myotic aids, and balanced the two before making selection; but the bottle of medicine reached the patient better dressed. Probably there was some difference also in the toilet care of the men themselves. Anyway, "doc" went to the water-bucket in his shirt-sleeves, and later howled because he did not get what his services were worth. If a practitioner has been furnishing his remedies without charge, or even if he has not been charging enough for them, now is the very time to correct this expensive error. It is very easy to explain that the rise in the cost of drugs requires changing the system. A little good judgment in this matter will add to the income materially—*add to it by stopping an entirely uncalled-for business leakage.*

Dispensing-Hints.—In dispensing drugs, the most convenient as well as *accurate* way is, to use the active principles or concentrates where available—and, in this day of therapeutic and pharmaceutical progress, such can be obtained to an extent that in the writer's practice largely does away with the older fluid preparations. However, pending further advance, investigation and confirmation of certain empirically proven whole drugs, such still have their field.

Using the tablet system enables one to gauge accurately the dosage without the necessity either of weighing or measuring the potent elements of the prescription, and leaves the prescriber to select a suitable menstruum without further calculation, where the tablets are not given in such form. It is seldom necessary to go to the expense of using high-priced elixirs, although there are cases in which, because of delicacy of the stomach or for other reason, a ready-mixed pepsin or other vehicle is both desirable and convenient. As a rule, the menstruum is simply an agent to dissolve and preserve the drug and to regulate dosage; the only other requirement is, to give a pleasant flavoring where taste is objectionable.

In most instances, water, glycerin, syrup, and alcohol are all that is required for making a solution or suspension. A very small amount of alcohol, this being ordinarily the best preservative and solvent at hand, as a rule suffices, unless climatic conditions are unusual. Use as little alcohol as possible; by adding glycerin its use often can be minimized. Add to this list caromel, cudbear, and flavoring, together with the acids required to aid solvency of quinine salts, and the ingredients are at hand for most extemporaneous prescriptions. Often solution of tablets in water alone is sufficient when the medicine is for immediate consumption. Coloring and flavoring tablets are for sale by drug houses, thus further simplifying the prescribing, if one so desires. The main thing, aside from the ever necessary caution against incompatibles, is knowledge of the solvency of the agent or agents used. Some little reminder like "Merck's Manual" (sent, I think, for the asking) is very helpful for instant reference in the matters of solvency and compatibility.

A little point to be remembered is about the usefulness of saccharin, 550 times sweeter than sugar, especially when carbohydrate intake is objectionable.

In dispensing tablets in form, it should be remembered that, although not quite as quickly soluble, the coated tablet is better protected against deliquescense—a matter of importance in damp climates or seasons. Often it will be both a better protection as well as an improvement in the appearance of the prescription if dispensing is done in homeopathic vials instead of in pill-boxes.

Solutions often used and permanent, such as of boric acid, sulphate of magnesium, and the ordinary lime-water always should be kept in stock, ready-made. If it is desired, as it often is by this writer, to prescribe external applications of sulphate of magnesium solution, better results will usually be obtained by dispensing the solution already prepared and colored. Patients who would not use faithfully a solution prepared by themselves, by putting "a handful of salts in a bowl of hot water," will use the madeup and properly dispensed solution.

Have a bottle of improvised weak elixir, mostly water, ever at hand; it can be modified as needed, and will save going to that water-bucket.

Be especially careful about the baby's medicine. A little more trouble will make a

palatable mixture of almost anything. The patent-medicine guild know this well. Please the baby with its medicine, and the child can be handled better: Johnny and his mother will both appreciate this.

Little Things About the Baby.—When it is necessary to take the child from the mother's breast, maintaining the milk supply, to prevent inopportune and compulsory weaning, is not to be forgotten. Care for the general health during the trying ordeal of caring for a sick child and use of the breast-pump is the least that can be done. Better, if possible, have her borrow a neighbor's child—being sure that the neighbor lady and child are infection-free, and that the borrowed child is not overfed. There often are cases where this aids in weaning a baby, and sometimes it is an aid to a sick mother compelled to wean a child. The doctor does well to be mindful of all these possibilities. They are little things that help.

After those bad cases of dysentery we have had so many of this year, there often follows constipation. Here, liquid paraffin comes in most excellently. It seems to fill a place long vacant in the writer's practice. This agent, together with an occasional glycerin suppository, often will work surprises in efficacy.

While attending a baby during illness, one often can inculcate ideas as to its care that will be perpetuated when the child is well. Among these, are necessity of regular habits of feeding and, with a certain class, the advantages to be secured from regular bathing as an aid in maintaining health.

Convalescence from disorders of the alvine tract, with its accompanying disturbance of gastric, intestinal, and hepatic secretions, often is aided by the use of brucine and hydrastine. The writer uses these at the stage of gradual resumption of normal diet, whether it be milk feeding or other diet in the older child; he is convinced that these agents aid wonderfully in bringing the child to "tone" quickly.

There is a tendency, in treating infants, to resort to overmedication; on the other hand, the reverse often is true. The writer believes that, while hard pushing of such remedies as emetine and the sulphocarbolates as well as of other agents in emergency, is imperative, the more passive states of disease should be met by the indicated remedy regularly exhibited in small dosage. Aconitine, perhaps the oftenest used child's remedy, can be pushed hard (fortunately it is quickly eliminated), without cumulative action, and gives plain indications of effect produced. In the writer's practice, there is no room for the slower and less directly acting coal-tar synthetics in treating children; seldom with adults.

A. L. Nourse.

Sawyerville, Ala.

A NOTE ON THE TESTING OF DISINFECTANTS

In view of the fact that the International Committee on the Standardization of Disinfectants, appointed at the last meeting of the International Congress on Applied Chemistry, cannot meet this year, owing to the war, and that this may entail a further delay of three years, we desire to call attention to one or two points which have arisen since the publication of our paper on "Approved Technic of the Rideal-Walker Test," and to submit the following suggestions as addenda to the paper referred to.

First, in view of the difficulty experienced by some workers not familiar with the technique of the chemical laboratory, we suggest that a burette, such as that described by Hermann W. Mahr, of the Board of Estimate and Apportionment, New York, can be adopted in place of the dropping-pipette. On the other hand, we know many workers who have a decided preference for the dropping-pipette originally used by ourselves and who do not see the necessity for changing this detail of the technic.

The second suggestion deals with the well-known variations in resistance offered by the standard broth-culture of the bacillus typhosus. To obtain the desired result in the phenol column—life in 2 1-2 minutes and in 5 minutes, and no life thereafter—dilutions ranging anywhere between 1 in 80 and 1 in 140 may be required. We feel that this range is too great and suggest, therefore, that the culture be rejected if it calls for a phenol dilution higher than 1 in 110 or lower than 1 in 90. Where the culture becomes so attenuated as to call for dilutions higher than 1 in 110, it can be strengthened by passage through any suitable animal. By restricting this range in dilution, the only rational objection to the Rideal-Walker test is at once removed.

A new difficulty has been introduced through the war; it is impossible now to obtain supplies of Witte's standard peptone. We understand that this matter has been taken up by an American committee, representing four prominent laboratories, with

Doctor Conn as umpire, and that this committee is about to report in favor of a brand which is said to be equal to Witte's in every respect. In the meantime, it would be interesting to have the views of other workers. We, therefore, invite discussion on this point.

SAMUEL RIDEAL.

London.

J. T. AINSLIE WALKER.

New York.

TREATMENT FOR INGROWING TOE-NAIL

Ingrowing nail is a condition induced, not by the nail growing into the flesh, but by the toe being so compressed as to force the soft tissue against the hard edge of the nail and producing the appearance of ingrowing, as also the soreness. The first thing to do is, to get ready for the treatment. The toe must be thoroughly washed with an antiseptic soap and warm water, then, without giving unnecessary pain, all hard cuticle and any rough edge trim off.

If there is great inflammation and exuberant granulation, apply the ethyl-chloride spray and freeze the tissues, then cut and scrape them away before they are thawed out. Now apply two or three drops of pure lysol, and over all place a large thick covering of antiphlogistine, enveloping the end of the toe and extending clear to the first joint.

The lysol will coagulate the albumin in the tissues and, as the refrigeration passes, the terminal nerves will have had a local anesthetic, so that there will be little or no pain to follow. The antiphlogistine is hygroscopic and, as it removes the swelling and also the heat, the kaolin paste becomes baked and serves as a splint and a fine protection to the toe. This acts like the old-time gluecots—formerly in fashion for the boys in the lumber-camps when they had hurt their fingers. Repeat these dressings every twelve hours, till the soreness and swelling have quite subsided. This will be in a few days, and your patient will be delighted.

Now comes the real treatment. Cut two strips of adhesive plaster 1 3-4 inches long and 1-8 of an inch wide. Attach one end of a strip of the plaster to the outer side of the toe, near the edge of the nail, over the sorest part. See that it is stuck tight and fast, then press the flesh away from the nail with the free hand. Make good, strong traction on the strip of plaster, drawing the flesh away from the nail's edge, then, by a downward spiral motion, draw the plaster taut beneath the toe and bring the other end up on the opposite side and fasten on top of the toe, back of the first joint. In like manner treat the opposite side, reversing the spiral and crossing the plaster under the toe. You now have a splint that will not slip, and it draws the soft parts away from the nail.

Now cut a bunion-plaster in such a way as to leave a U or horseshoe-shape, moisten it and apply to the top of the toe—the circular part below the matrix of the nail, one of the arms (or corks) is to come up the middle of the nail, the other to be carried out on the outside where the plaster is attached. Dust the toe with boric acid, then tell the patient to put on his stocking and shoe.

This dressing should be removed and renewed every three or four days. When a nail is entirely removed, it requires just thirteen weeks to grow a new one. Treated in my way, you have to wait only till the edge of the nail can grow out to the normal size, which will be far less than thirteen weeks. But the glee and satisfaction of the patient at this excape from pain and lameness will not deter him from waiting, but he will gladly accept the delay. A man's toe-nails were made to stay with him, and not to be cut out. Many are made permanently lame by injudicious cutting.

C. S. COPE.

Detroit, Mich.

THE PHYSICIAN WHO DRINKS: A COMPARISON

Who has not heard it said of the physician who drinks, "He is a good physician, if he'd let drink alone"?

Good physicians who do not drink become tired of hearing their drinking rivals praised, when as much, and more, credit is due those who never touch booze. Of course, no offense is meant to the sober physician. It is simply thoughtlessness on the part of the public when they make such remarks. But no sober physician likes to hear that remark. It really gives the drinking physician too much credit—more, many times, than he deserves. This remark tends to eulogize the drinking man and forget the merits of sober, competent physicians.

Sober physicians do not want to become drinking men, in order to have it said of them, "He is a good physician, if he'd let booze alone." They'd rather have it said of themselves: "He is a good physician, because he lets drink alone; he never touches it, he is a total abstainer, and that's why

we patronize him." No, indeed, the fact that one physician drinks does not necessarily rank him above sober physicians.

In fact, when you take into consideration the positive, known evil effects of liquor on the nervous system, yes, on the entire human anatomy (which every child who has studied physiology has learned), they should be rated below, and not above, par. In calling a physician, you do not say, "Call Doctor Jones, he is a good physician, for he drinks." No, no, you want the doctor who never touches it, a man who, you know, is sober every time, everywhere.

"KIRK."

A DOCTOR'S TRIBUTE TO HIS DEAD WIFE

On the 17th of July, in the hospital conducted by the United Fruit Companies at Tela, Spanish Honduras, my wife died of chronic interstitial nephritis, complicated by cardiac and vascular disorders, and, although she had all the care that real human kindness and sympathy from doctors and nurse can bring forth, nothing that Doctor Conner and the nurse, Miss Cotter, could do, was of avail, and death came to claim its own.

Most of you remember Mrs. Hollmann, my partner, and, as Doctor Elliott put it, *"a real doctor's wife"*; some of your readers knew her personally, even, and they all were of the opinion that it was good fortune to have known her.

When we were married, she felt pride in becoming a doctor's wife and gloried in being accorded the grand opportunities this position offered for doing good. She began immediately to fit herself to help me intelligently, and novels and magazines had to make way for medical literature and journals; and even the illustrated fashion periodicals, so dear to woman's heart, were thrown aside upon the monthly arrival of her favorite among them all, THE AMERICAN JOURNAL OF CLINICAL MEDICINE. How she did long to meet you, Brother Abbott, and you, Doctor Burdick, and you, Doctor Waugh!

It did not take long for the patients to find out that hope and consolation were to be found at all hours at the doctor's office, even during his absence. And her sympathy and kindness was deeply appreciated by the simple-minded folk; even the Indians, Huasticas, and Mexicans, supposedly ungrateful, divested themselves of their innate stoicism and vied with each other to serve her. The worship of these simple, untutored Indians was something wonderful.

Her creed, as she explained it to me, was something like this: "Never undertake to treat even the poorest, unless you are resolved to give him the very best you can; if it be only a dog you operate upon, do not be careless with your instruments, because it is merely a dog. If you give some surgical service, do not fail to take all the pains in antisepsis and asepsis, exercising the same care you would when treating your very-best-paying patient or dearest friend. It is far more honest not to undertake a case than to give slovenly service."

And the sick and the poor, yes, and the dogs, too, everybody and everything loved her, and many times, hiding her own great suffering under a smile, her sympathy would alleviate the sufferings of others. She never would acknowledge sickness or pain when she thought someone else needed her services or sympathy.

And, oh! How she suffered!

And, then, many and many a time we would go without eating, because she had given what little food there was to starving women and children who needed it more. Driven from place to place, all she asked for herself was a home. A home, woman's supreme right—a home. And a home was denied her. Her yearning for a home was something tragically pathetic, and, yet, after all the good she did, she had to die an exile, with the cry of "Home" on her lips.

How many American women do I see who have to go "home" at least once a year, spending three hundred, four hundred dollars on such a trip, although their husbands are mere wage-earners and poor men. And the worst of it is, that such a husband, returning from his day's work, finds his home empty, and his heart fills with bitterness and coldness, till at last his desolation drives him to seek consolation in the dirty hovels of the halfbreeds or to drown his anguish in the bottle. And then, to crown this mischief, often such a wife, who herself is to blame, seeks divorce from a drunkard-husband and leaves him stranded and a wreck. Many unmarked graves of the tropics are filled by these hapless wrecks.

When during the revolution I tried to get my wife to go to the Battle Creek Sanitarium, as she already was suffering, she exclaimed indignantly: "What, I go to the States and leave you to face these hardships and dangers alone? My place is by your side, and here I stay, with you."

And poverty and misery and starvation even were not strong enough to make her leave me, and through it all she found time and opportunity to help others; for, making light of her own anguish, she always was filled with the thought that others were enduring a still worse fate. One time she walked with me over a rough mountain-trail, twenty-five miles on foot. As only capital, I had in my pocket thirty-seven cents, and I was downhearted. Yet, tired, hungry, and sick, she tried to lift up my falling spirits, forgetting her own suffering. In Umakan, she reduced our rations to beans and tortillas, the cornmeal pancakes of the common people, so that she might give two dollars a day to the hungry people who were starving on account of the revolution.

Such was Mrs. Hollmann, my wife.

And I, alone in the world, old, with no prospects or ambition for the future without her, still have resolved to honor her memory by finishing my day by living a clean, straight life, so that when the day comes that Death reunites us I shall have no need to feel shamed on meeting her.

Such is the influence of a really good woman.

A. R. HOLLMANN.

Tela, Spanish Honduras.

[A beautiful, beautiful tribute, coming from the bleeding heart of a stricken man. The sympathy of every reader of this journal will go out to him in his lonely exile. Doctor Hollmann is one of the many once prosperous men whose homes have been broken up and lives ruined in unhappy, turbulent Mexico. Multiply his suffering ten-thousand fold and you have not then begun to measure the extent of the distress of her people.—ED.]

OUR DEPARTMENT OF EXTENSION

Last month we published the first of a series of short articles intended for distribution by physicians among the laity, the purpose being to provide dependable information concerning matters of general medical interest.

It is believed that if physicians, themselves, place this information in the hands of their patients it will prevent many from falling into the hands of quacks, while strengthening the bond between doctor and patient. Great good may be accomplished in this way.

In order to facilitate this educational work we shall be glad to furnish reprints of these little articles at cost, although every reader of the journal may reproduce them himself if he so desires. Our single purpose is to be of service to the profession and, through it, to the many millions of people which it serves.

The following article is No. 2 in the series:

SIMPLE RULES OF HYGIENE FOR THE EXPECTANT MOTHER

The expectant mother can always extract comfort out of the recollection that countless others before her have experienced motherhood and that, during past generations, the frame and make-up of woman have become wonderfully adapted to this process of childbirth. The little child has likewise become so shaped and constructed that its birth causes the minimum of danger to the mother. Childbirth is a natural event and both mother and child are by nature prepared for it.

The young mother should at all times remember that natural living is the best preparation for natural childbirth. She should always think of this when anxious friends recommend this fad or that. Common sense should teach her that she ought not to starve herself or live on any rigidly restricted diet. Any practice or diet that is unreasonable for a woman before pregnancy is unreasonable for her during pregnancy. The socalled theory of maternal impressions is a superstition and entitled to no belief whatever.

A cheerful mood is more easily obtained if one goes about the usual daily routine of living just as though nothing were going to happen. Moderate exercise, light work, a few social duties—these tend to prevent morbidness and hence are helpful.

The daily baths should ordinarily be in some degree near body temperature. If any variation is made in either direction, the physician's approval should first be obtained. The bathroom should be comfortably warm, otherwise the baths had best be administered from a bowl in some other and warmer room. Ordinarily the baths should be taken either upon rising in the morning, after a nap in the afternoon, or upon retiring at night. Which of these is better in the individual case should be decided by the physician.

The expectant mother should take exercise in her customary way, and to her usual extent, provided that no violent exercise, such as jumping, jolting or straining, is permissible. A daily walk into the open air does much toward keeping one in a cheerful frame of mind. Routine household duties are usually helpful, except in an overworked person.

The diet should be generous and varied. Whatever the patient wants, she should eat, provided that strange and unusual articles of diet had best be withheld until the physician can decide what is best in the given case. The expectant mother should try to eat some fresh vegetables, fresh meat, and fresh fruit each day. Canned goods should be left out of the menu. A glass of water at mealtime is always permissible, but other beverages should only be taken as recommended by the physician.

Clothing should not be worn tight about the waist. If any corset is worn, the physician should decide if it is the right kind; usually a proper corset can be worn up to the middle months of pregnancy, but it should of course be worn loosely.

During pregnancy the ordinary sex relations should be discontinued. The husband should be more than usually tactful and patient, as it is generally conceded the wife has a right to be somewhat capricious during this time. A woman com-

panion, especially if it be her mother, is often of great help to the expectant mother. At the same time, a companion could do harm, if she were officious or given to repeating stories of past labors she had witnessed or heard about.

Besides the foregoing general suggestions, there are certain special precautions that had best be observed in advance. For example, a specimen of the urine should be sent to the physician for examination, once a month during the earlier months, and oftener during the last two months of pregnancy. An occasional visit to the physician's office tends to clear up doubtful points and is well worth the while.

If the nipples seem tender, this fact should be reported to the physician so that if he thinks it needed he can prescribe some treatment to harden the nipples before the baby's arrival.

To forecast the probable date of labor, count back three months from the date of last menstruation and add seven days. This will give approximately the month and day upon which the birth will occur. A certain variation from the expected time should give no surprise.

The young mother-to-be must beware of the various fraudulent advertisements of patent medicines which claim to make childbirth easy. Childbirth is made easy by a following of the rules mentioned above, not by using patent medicines. In spite of alarming stories told by old ladies and in spite of claims of patented nostrums, the young mother who goes cheerfully about her duty, firm in the faith that she can accomplish her high mission, will soon find herself a successful and happy mother of a pretty and healthy baby.

ON THE FIRING LINE

A story of one day's work in the trenches will give one a good idea of the terrible struggle with which we are connected. Take some day of the last of June as a sample.

At 10 o'clock one evening, the airmen reported a number of Prussians concentrating at a certain point on the line, and that the artillery-fire had been severe for an hour or two before along that portion of the trenches. Word was sent to the receiving hospital to make ready, as there might be a number of patients early in the morning. Report came that only two surgeons were available. Word was sent to the base hospital to send up five doctors, and with that I retired.

At 2 o'clock in the morning, the telephone announced that very heavy firing was going on along the trenches. Two columns had charged, one had been driven back, and the other was still fighting. An hour later, another telephone message announced that both charges had been repulsed and an unusual number of wounded were coming in.

After breakfast, at 5 o'clock, I went over to this receiving hospital. Everybody was very busy. All the surgeons were occupied. The wounded were still coming in, mostly on stretchers. Those able to walk had been received and were lying around on the ground, waiting for attention. The charge had been unusually severe and was broken up by the machine-guns, which had wounded a large number of the enemy, preventing them from running away. Between 20 and 30 prisoners, some wounded, were interned near the hospital, waiting to be taken to the rear. The wounded Germans brought in were laid by themselves. Each one of our wounded soldiers was examined superficially and the question of his ever coming back to service was settled. A blue tag tied to his coat signified an early recovery. A red tag was attached to the garments of those more seriously wounded who were not likely to be able to go into service again.

Operations were going on on two tables; arteries were tied, fragments of bones were removed, lacerated wounds were sewed, and the general aid for transmission to the base hospital was given. A line of autos was in service, each taking 3 or 4 men at a time, back some four miles to the base hospital, where they were examined again, and, when it was possible, put into an ambulance-train and sent farther back.

The morning was clear and cool and the kitchen-camps were in full activity furnishing soups and coffees to all who came. The wounded continued to stream in until about 8 o'clock, when the field-surgeon declared that everyone out of the danger zone had been cared for.

Several died from wounds and their bodies were carried off to one side to be made ready for burial. Others unable to be carried to the rear were placed in the best possible condition and were visited by nurses at short intervals. The rest were sent to the rear as rapidly as possible, and by 10 o'clock German prisoners were all escorted out of sight and the wounded of both armies were grouped and disposed of.

The surgeons then had a chance to rest. Some had been on duty all night, and they went to bed. The attendants were around, cleaning up and arranging for another day's work. The heavy, dull roar of artillery-fire along the trenches was continuous, and now and then we could see, at a little distance, stragglers from the trenches coming back or moving around. Autos were coming and going and squads of soldiers were moving from place to place. In the hospital-office, the clerks were making records writing papers and answering 'phone calls. After dinner, I went some 10 miles further down the line, stopping at the various receiving hospitals, hearing reports, and signing papers.

At one place, a charge had been made at about daylight, but a machine-gun had been placed in position and the charge was quickly repulsed. Only a small number of wounded came in at that station. At another hospital, an ammunition-wagon had exploded and a dozen or more men were more or less wounded. All had been sent to the rear. Men were repairing roads, building bridges across ditches, and abandoned trenches were made into burial grounds for the dead in the vicinity. At one place, a number of dead from both lines, who had lain on the ground twenty-four hours or more, were dragged to the trenches and covered up. Sometimes marks were put up, but usually not.

The trees were shattered in the vicinity, fences were broken, and what had been farms and stables were in all sorts of ruined conditions. A spring, the water of which was used at a certain receiving hospital, was found to contain very suspicious-looking water, so, the hospital was removed a half mile away where the water supply was better. On my return, I called at the various hospitals and inspected them, to see whether they were ready for a sudden emergency.

Finally I arrived at headquarters at 6 o'clock. Here, 'phone messages were received and answered, concerning persons wounded and what disposition was to be made of them. These were 'phoned back to the hospitals to which they were supposed to have been taken, and answers from them were received. Doctors who were indisposed 'phoned for permission to go back to the rear, and the question became as to who would take their places.

With these little details attended to, and listening to the speculations of the commanding officer as to whether there would, probably, be a charge at this or that point, besides the reports from the airmen, constituted my day's work, and at 10 o'clock the lights were out and the sullen roar of cannons at long distances furnished a lullaby for the night.

My duty requires inspection and a visit to about 20 hospitals over a range of 60 miles. Sometimes these are concentrated and at other times they are spread out, depending upon the action of the troops at the front. I am supposed to provide for every possible emergency in the sudden care of a large number of wounded, by nurses, surgeons, dressers, and automobiles.

The base hospitals have less strenuous work because they can anticipate and be provided for emergencies. With us, there may be a sudden change of the disposition of the enemy in front or a sudden hurling mass of men break the line at certain points, but even this does not amount to much, although quite a large number of wounded may come in from a charge of this kind. A countercharge on the flank destroys the advantage which the enemy is supposed to have gained, so, it really becomes a sort of useless wearing out and striking back and forth without making very much real progress.

Both the officers and the men have a feeling of discouragement at the little that is accomplished by lying in the trenches, mounting big guns and planting machine-guns in position. Sometimes several days will go by and the receiving hospitals are practically deserted, not more than three or four persons applying for help. Then this will be followed by a sudden break, in which both sides make furious charges and countercharges, and then retire.

Evidently the enemy is not showing the same recklessness as formerly. Their charges are weaker and are more easily repulsed. One can have no idea what a narrow field we people on the front live in. Occasionally newspapers come in, bringing desultory news, but the progress of the war and events outside are largely unknown. All branches of the service are heartily disgusted with the dull monotony of trench-service.

Occasionally some official will come to the front, to secure the body of some member of his family, and this produces a little variation, particularly if the body has been buried in the firing-zone, where the risk of being shot adds excitement to the occasion.

So the days go by with intense longings for the end.

"BRITON."

HISTORY OF THE WAR BETWEEN THE NATIONAL ASSOCIATION OF RETAIL YARB-GATHERERS AND MIXERS AND THE MEDI-CUSSES

The Association of Retail Yarb-Gatherers and Mixers has proposed a law designed to make it a crime for the Medi-cusses to administer the yarbs that they wish their patients to take. It's a case of "sour grapes" with the Yarb Gatherers and Mixers. History shows that for years these people have exploited the Medi-cusses with great profit to themselves and great financial loss to the Medi-cusses. And now that the worm has turned the Yarb Gatherers and Mixers purpose to make it "agin" the law for worms to

travel in any direction other than the straight and narrow path to the Yarb Gatherers' shop.

If there is anything in the theory of evolution, it is only reasonable to suppose that the medical worm has grown in knowledge and perception to the extent that his foresight is now only a little less keen than his hindsight. And taking aim over his hindsight, what does Sir Wormicus Medicus see? Away back yonder in the Stone Age of medicine, his great-great-grandfather Medicuss gathered yarbs and boiled them down into a sort of Irish stew with which to drench the natives; while a little later his grandfather Medi-cuss had improved the stew by straining it and his method by giving only one pint at a dose, so that his fame spread far and wide; thereby increasing his practice to such an extent that he had no time to gather yarbs and stew his own medicines. Inasmuch as necessity is the mother of invention, grandfather Medi-cuss thereupon conceived the brilliant plan of instructing some youngster in the art of gathering yarbs and making decoctions. This plan proved so successful that other Medi-cusses followed in his footsteps, and it was not long before the fad spread all over the cave country.

But, in the course of human events, it is only natural to suppose that the Yarb Gatherers and Mixers would evolute a little on their own account. They had seen that the Medi-cusses were making more money and presenting a niftier appearance since they had shifted the labor and dirty work on to the Yarb Gatherers; so, they passed the secret word that there would be a meeting of the National Yarb Gatherers and Mixers Association in a secret cave, to devise ways and means for putting the kibosh on the Medicusses.

The meeting was called to order by Toxaphore J. Encephalon, who introduced as the principal speaker of the evening Mr. Osteoid Caput Cerebellum. This gentleman said, among other things, that the Medi-cusses were putting it over the Yarb Mixers by letting them do the dirty work for small pay, while the Medi-cusses themselves were putting on airs and making all kinds of money. He then offered a resolution, which was unanimously carried, to the effect that the National Yarb Gatherers and Mixers Association devise plans and methods calculated to aid its members to make more money. He declared they must "get" the Medicusses by stealthy and surreptitious means, while at the same time openly swearing undying affection and respect for said Medicusses, in order that they might not suspect what was coming to them until this Association was powerful enough financially to put the final K-O punch to the latters' plexus.

Thereupon diverse and various plans were suggested to this end, but the following was finally adopted, with the understanding that the Yarb Mixers could add any new clause they saw fit for the good of the order and for the undoing of the Medi-cusses. And this is what they resolved to do, to wit:

First: To quit working for the Medi-cusses and to open up yarb-mixing shops of their own.

Second: To induce the Medi-cusses to send their patients to them with a recipe for yarbs and directions how to mix them; also, how the brew should be taken.

Third: To use these receipts for their own gain, by practicing physic on the sly, and letting it be known that they had on file all of the favorite receipts of the Medi-cusses and would mix them with great cheer for any of the natives that so desired, thereby saving said afflicted native the expense of consulting a Medi-cuss.

They made friends with the natives by patting them on the back and giving them once in a while a drink of strong mixture concocted for that purpose, and which acted to make any man so brave that forthwith he would hie him home and proceed to sass his mother-in-law. Any time a Medi-cuss would get inquisitive and wonder where his business was going to, these sly yarb gatherers would beguile him to drink an ewerful of this mixture, when for the next several days the Medi-cuss wouldn't want any business whatsoever; and soon this potion got to be one of the Yarb Mixer's most widely known and popular drenches.

Now, like the Medi-cusses before them, the Yarb Mixers began to feel their oats and put on airs and began to wear fine raiment. At the same time the Medi-cusses were getting poorer and poorer; nor were they astute enough to discover the cause of their sad undoing. The Yarb Mixers were becoming money-mad, and were continually holding meetings for confabs, but no longer in secret, to devise ways and means for making even more money. At length old Toxaphore J. Encephalon, B. S., who had accumulated great store of gold and had set his heart on retiring from business, agreed to make known the secret of his success, provided they (the Yarb Gatherers and Mixers) would swear upon a stack of cactus never to give it away to the hated Medi-cusses; for, he feared that

some of them might get peeved and cut out his gall, and for this charge him a large fee, as they now were resorting to cutting people, in order to earn a little money to enable them to live.

The members of the Association being duly sworn, old Toxaphore spake:

"Gents, the secret that I am about to slip you is this: Whereas the gathering of yarbs and stewing them is hard work and is becoming more and more expensive, I bethought me of a fine scheme to save work and make more money. A long time ago I departed from the directions given us by the Medi-cusses for making decoctions; for, whereas, their law requires one quintal of yarbs to one cauldron of water, I would put but a pinch of yarbs into a cauldron of water, thereby greatly adding to my profits. Also when a Medi-cuss sends me a receipt calling for costly yarbs, I put in yarbs that are cheaper. But, I warn you to be on your guard, lest the Medi-cusses discover your little trick and, mayhap, mix his own yarbs, as he did in the past."

Old Toxaphore sat down amid deafening roars of applause, and, for giving this great Trade Secret to the Association, they conferred upon him the talisman of the Golden Fleece; this Golden Fleece being chosen in token of the shrewd way their fellow had fleeced the Medi-cusses out of much gold.

Right here is where the Association got in bad. For, be it known that when more than one person knows a secret it is a secret no longer. On a certain occasion one of the Yarb Mixers, while under the influence of too much of their favorite brand of strong dope, openly made boast at a party of Medi-cusses, and brazenly scoffed, at the way he and his fellow Yarb Mixers had handed them the citrous fruit, in the way of inert decoctions and substitution of cheap yarbs.

The Medi-cusses pricked up their ears eagerly, their senses being sharpened by the hunger of their bellies; and they whispered one to the other, saying: "This man revealeth a great mystery. Let us have patience and by foxy questions induce him to unravel it to the core." So, by careful inquiry and spying upon the Yarb Mixers, they found out the cause of their undoing, and they rose up as one man and said: "Now, as in treating disease, it is necessary to remove the cause. Let us cut this ulcer out of our midst and go back to the teaching and practices of our fathers; let us gather and mix our own yarbs, so that our patients may have pure healing potions of full strength and the kind of yarbs that we wish them to have."

Now, when these words came to the ears of the National Association of Yarb Gatherers and Mixers, there was loud wailing and gnashing of teeth, and they cried: "We must think of some scheme to stop these pestilential Medi-cusses, or we are undone; the jig will be up." So, a meeting of the Association was called instanter, to devise ways and means of stopping the Medi-cusses from carrying out their fell designs. Old Toxaphore J. Encephalon, B. S., Ph. G., was called upon for a speech. He being the one who had gotten them into this dilemma, they expected him to pull them out.

"Gents and feller citizens," he began. "there is only one way to put the unlucky sign on these Medi-cuss ginks, and that is, to appeal to the ignorunts of the people. Work on their imaginations. Tell them that these ignorunt Medi-cusses haint got no sense enough to gather yarbs, and, as for mixing them, they would be sure to put some rank pizen in every mixture that would be certain death to everyone who chanst t' swaller it."

With that, old Tox sat down, but under somewhat less perfervid expressions of enthusiasm than on the aforesaid occasion. However, they discussed and cussed the vexed question, saying among themselves: "Old Tox is a wise gink, all right; still, so far as we know, there are a lot of ignoramuses among the people who haven't taken any interest in this question, and these guys don't care a rap where they get their medicine dope, just so they get some stuff."

Then one of the Yarb Mixers spoke up: "That is just what makes it easy for us; they don't know anything about it, and they don't care. We will pass the secret word to all the Yarb Mixers to bribe the town-criers, and on a certain day to have them cry out to the people that the Medi-cusses are trying to kill them by using their own yarbs instead of ours. We will scare the lights out of them and stampede them, so that they will go to the King and have a law proclaimed to stop these infringing Medi-cusses from pulling off this stunt before they get hep to what we are up to. Then we'll have them in our grip and won't let 'em give a glass of pump-water without sending us a recipe for it. We will also make it agin' the law for the Medi-cusses to apply plasters or unguents; for we have heard that they are making money by making rubbings with goose-grease for rheumatiz and sich. If there is any money in rubbing in grease, we are the lads to do it.

"We understand that a law of this kind is strictly constitutional, for a similar law was

passed in some furrin country to the west of us—Nevada we think is the name of it—where his Royal Highness King Ignuts Placenticus proclaimed a law that, in case a Medi-cuss wished to administer a clyster, he must call in a Yarb Mixer to mix the soap and water for him, for the reason that mixing soap and water is a very dangerous and delicate process, and should only be performed by one having great skill and experience as a mixer, it being represented to the King that the Medi-cusses were entirely ignorunt of the modus operandi of mixing anything."

But, alas for the plans of mice—and some men! Sure, there's many a slip twixt the cup and the lip. The Medi-cusses no longer were doing the Rip Van Winkle stunt, but were keeping close tab on the Yarb Mixers. They got hep to this scheme of the Yarb Mixers as soon as it was hatched, and they said: "Ha! ha! we shall show these Yarb Mixers a trick or two. We will do unto them as they would do unto us, only we'll do it first, by heck."

So they challenged the Yarb Mixers to do battle to a bitter finish. So, now, the challenge having promptly been accepted, war is declared, in this year of Grace, nineteen hundred and fifteen, and both sides are armed to the teeth with battledore and shuttlecock. The slogan of the Medi-cuss is, "Give us Liberty or give us Death." And the results of the raging conflict are being languidly watched by a disinterested public.

F. A. WIER.

Joplin, Mo.

ANOTHER RULING ON THE FEDERAL ANTINARCOTIC LAW

The following ruling on the Federal Antinarcotic Law (T. D. 2344) has recently been issued by David A. Gates, Acting Commissioner of Internal Revenue. The first part of this ruling is of special interest to physicians. Please read it very carefully.

In entering items calling for narcotic preparations and remedies on the order form issued in accordance with the provisions of Section 2 of the Act of December 17, 1914, *the quantity of narcotic drug to the ounce must be indicated, or, if ordered in tablet form, the total number of tablets and the quantity in grains per tablet should be stated.*

The signing of narcotic order forms with a firm name, with no other name to indicate who wrote the order, will not be permitted. The name of the principal officer of a firm, corporation, partnership, or company, or the person who is granted, through power of attorney, authority to sign such orders, must invariably appear thereon and druggists and dealers are cautioned against filling such orders unless these requirements are complied with. Stamps or printed signatures on order forms are not permitted, and, in every instance, there must be an indication of individual responsibility in the preparing and signing of these forms.

A SAFE AND SANE AID TO THE OBSTETRICIAN

After several years of general obstetrical practice, during which time the stork has led me from the filthy hovel to the modern sanitary home, or the reverse—at times without respite for recuperation of self or supplies, sometimes attended by a more or less capable trained nurse, but more often by a volunteer neighbor-woman—I am glad to welcome to my armamentarium any device that assures aid against the bugbear of infection and promotes the comfort of the patient.

Some months ago, I procured a Huston prophylactic obstetrical pan, as it seemed to meet the requirements of modern aseptic obstetrical technic; and it has proven so satisfactory that I feel that a short description of this appliance as also of my personal experience with it will prove welcome to CLINIC readers.

This simple piece of furniture consists of a folding aluminum frame, closed at one end by a pneumatic pad inflatable to any desired tension. Over this frame and pad fits a "pan" of tough waterproofed parchment, the whole constituting a comfortable rest for the patient's back and buttocks and a sterile nonleaking receptacle for the products of labor, which, at the finish, can be picked up and removed, without soiling the bed, and destroyed.

The parchment covers, sterilized, are supplied in sealed individual wrappers and cost but a few cents each. They are, as indicated, to be used but once. The whole contrivance, with extra covers, fits easily into a small space in the ordinary obstetrical bag and is ready for instant use in the worst of surroundings.

In my own practice, the use of this pan has done away entirely with the employment of such makeshifts as the newspaper pad and the oilcloth under the sheet, with their danger of negativing aseptic precautions, as well as with the intractable spineless Kelly pad, with its muss and eternal scrubbing and sterilizing. Besides reducing my own anxiety over possible infection, it has pleased and satisfied the patients and lessened the work of the nurse.

The usual manner of proceeding is as follows: After having the patient's lower bowels

emptied as thoroughly as possible and the usual perineal toilet made, I place a sterile sheet under the woman's buttocks, then wait for dilation of the os uteri to take place. When this is nearly complete, the paper "pan" is adjusted, which is a simple matter. I am now ready to go on with the delivery according to the indications, the infant being received on a sterile pad in the end of the receptacle. Upon the completion of the delivery, the patient raises her hips, the pan is withdrawn, the buttocks are dried, and the perineal pad is applied, and there is none of the changing of gown and sheets or of any inconvenience to the patient.

In an emergency, I have used the pan without executing any of the preliminaries, but adjusted it barely in time to receive the child. On one occasion, where the bed gave way at the critical moment, this contrivance proved a Godsend, for sure, in that it retained the baby, while the mother and the attendants were shrieking and I, who had caused the catastrophe by carelessly resting my weight on the edge of the bed, was rolling on the floor in a most undignified, unprofessional manner.

T. A. WILLIS.

Clear Lake, Ia.

PICK-UPS FROM HERE AND THERE

Sir William Osler begged the soldiers not to be misled by misguided cranks playing into the enemies' hands by circulating literature on inoculation, stating that it is harmful and even dangerous. The few who objected to antityphoid inoculation were requested to depart at once.—*Canadian Practitioner.*

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American Medicine, a live journal under its founder, Gould, never was more alive than now, under H. E. Lewis's editorship.

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Now is the time to fetch out records of miraculous successes won in days of yore through ipecac. Why were they not exploited then? Because the drug was so uncertain that successes could neither be proved nor repeated.

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Glonoin, cactus, and sparteine are not heart-tonics, yet we continue to get cardiotonic effects from them. Some day we may comprehend the interrelations of vasomotor relaxation and tension and of heart work.

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The ubiquitous antivaccinator now urges disuse of vaccination, because there is so little danger from smallpox now. The Greeks have sailed; open the fortress' gates and take in the horse.

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Tice claims that tuberculin has lost ground as a remedy and no longer possesses the confidence of the profession.

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A common antidote for carbolic acid is alcohol, but cider vinegar is equally good and often more handy.—*Medical Summary.*

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G. A. Harman (*Medical Summary*) objects strongly to giving belladonna for constipation. Right—and wrong. In full doses, atropine paralyzes the peristalsis and checks the bowel movement. But, in small doses—*very small*—it merely paralyzes inhibition and favors action. In nearly all the stock pills, the dose of belladonna would be too large had it the full atropine strength, only the poor quality of the drug saves it. In large doses, atropine paralyzes the circular fibers of the muscular coat of the bowel, especially if spastic; but it has much less influence over the longitudinal fibers.

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Our habit of speaking of diseases as entities is unfortunate. There is no such thing as a disease, but there are diseased men and women.—Emerson, *Indianapolis Medical Journal.*

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The action of antitoxin in laryngeal diphtheria is slow. Intubation should be utilized on the appearance of dyspnea.—W. D. Hoskins, *Indianapolis Medical Journal.*

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Aronstam (*Indianapolis Medical Journal*) says the treatment of chancroids consists in cleanliness and cauterization. Both good; but, when you have one to treat, crush and apply a tablet of galactenzyme. Just once—you'll need no more urging.

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Dudley Reynolds, dear old Foghorn Reynolds, is dead. Had the grip and died suddenly of heart failure. Love, Owen, Ochterlony, Elisha Wood (the old royal Lion of Peru), Davis, Shoemaker, Stone, Culbertson, Hamilton—of all the brilliant men and choice spirits who made the meetings of the A. M. A. delightful in the old days, scarcely one is left.

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Europe's soldiers swarm with lice, and lice carry typhus fever. Look out for an epidemic in the armies this spring.—*Medical Standard.* (The *taches bleuatres* of typhus fever were traced to lice.)

Just Among Friends

A DEPARTMENT OF GOOD MEDICINE AND GOOD CHEER FOR THE WAYFARING DOCTOR

Conducted by GEORGE F. BUTLER, *A. M., M. D.*

WITHIN the past few years, our ideas regarding the various joint diseases have undergone considerable change. We now look upon most of them as being of infectious origin, some by specific germs, others owing to a variety of organisms. It is true that there are several bacteria which may produce identical joint lesions. The same germ, on the other hand, may produce lesions entirely distinct. The same organism that produces an acute synovitis with serous effusion may produce pus, or there may be no fluid at all. Even in rheumatic fever, it is possible that we are not dealing with a specific germ; for, different bacteria have been found in the joint-fluid which, when injected into animals, have produced identical joint-symptoms. Among the joint affections which we now consider as of an infectious nature, there are included rheumatic fever, the group covered by the term arthritis deformans, the arthritis accompanied by the acute infectious diseases, those due to the pus-producing bacteria, and a large group of chronic joint troubles not included in arthritis deformans, but nevertheless evidently of an inflammatory nature. The organisms which have commonly been found to cause arthritis are the following: gonococcus, streptococcus, staphylococcus, pneumococcus, colon-bacillus, and influenza-bacillus.

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Infection may reach the joint through the blood, by extension from neighboring infection or directly from the outside through an open wound. An arthritis may complicate most of the acute infectious diseases, in which case a septicemia exists and the infection is easily carried to the joints. The most common acute diseases with joint complications are: gonorrhea, typhoid fever, scarlet-fever, pneumonia, influenza, measles, meningitis, and dysentery.. Local pus infections elsewhere in the body are a frequent source of arthritis. Gonorrheal infection of the prostate gland and seminal vesicles, sinus trouble, tonsillitis, middle-ear disease, pus-tubes, and many others may be the source of germs or toxins that are carried by the blood to the joint.

The intestinal canal, including the appendix, has lately been considered a cause of joint trouble. Cases of long-standing arthritis have been cured by catharsis and colon lavage. The nature of this source is not understood. Whether some unknown germ is manufacturing toxins in the intestinal canal or whether there is an accumulation of normal digestive products, we do not know. Direct extension from an osteomyelitis or phlegmon to the joint is frequent. Puncture and gun-shot wounds and compound fractures give entrance to some of the most virulent of all joint infections. Sprains and other slight injuries to joints frequently precede arthritis. Particularly is this true of children, in whom the ends of the bones are easily injured and susceptible to infection. Shortly after birth arthritis is, naturally, a result of navel infection or of gonorrhea within a few months.

Ankylosis is to be expected in most suppurative conditions and even in many where there is no effusion. This may be articular or periarticular. If articular, the ankylosis may be fibrous, from union of the opposite surfaces of the synovial membrane, or osseous, when bony union follows destruction of the cartilage. Periarticular ankylosis may be caused by thickening and shrinkage of the capsule or from adhesions and shortening of the muscles and tendons.

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The onset of septic arthritis usually is abrupt, but this may be masked by (and for awhile overlooked on account of) the presence of some general infection. The constitutional symptoms of sepsis—fever, chills, sweats, and weakness—are present in variable degrees. Some severe cases run their course without much general disturbance.

Considering all forms of septic arthritis, there is a tendency for it to be monoarticular. When polyarticular, all joints that will become involved usually are so from the beginning.

There are a few cardinal symptoms that are referable to the joints in all forms of acute arthritis. Pain and tenderness over the joint, muscular spasm, with flexion, heat, redness, signs of fluid, and loss of function, commonly are present. The muscular spasm and flexion are produced by stimulation of the nerves supplying the muscles that move the joint. A common law in anatomy is, that the nerves supplying the joint also supply the muscles moving it. The flexors being stronger than the extensors, they cause flexion. This position lessens tension and relaxes the ligaments, causing rest and comfort. In acute serous synovitis, there may be little evidence of any trouble except for the effusion which will usually disappear in three or four weeks. In the suppurative form, the course usually is months.

When of gonorrheal origin, arthritis may be divided pathologically into about four varieties:

1. The dry form, with indefinite joint pains, which lasts a short time and disappears or occasionally becomes chronic.
2. The serous effusion, lasting a few weeks and subsiding with moderate fibrous adhesions.
3. The plastic form, with no effusion and resulting in ankylosis.
4. The suppurative, due either to the gonococcus or to a mixed infection and resulting in strong fibrous or bony ankylosis.

Gonorrheal arthritis often begins in several joints simultaneously, soon subsiding in all except one joint where it is very persistent. It occurs in from 3 to 10 percent of all gonorrheal infections, and may come on as late as one or two years after all local discharge has ceased. It is not uncommon in children, and may come from a genital infection or from a conjunctivitis. Pneumococcic arthritis is present about once in 800 cases of pneumonia, and usually is suppurative. It seldom develops primarily in a joint. In typhoid arthritis, the hip is the usual location. Suppuration in the joint may be difficult to tell if the symptoms are masked by a general infection. In any doubtful case, aspiration should be performed without delay.

Acute joint infections must be differentiated, first and most important of all, from rheumatic fever. This usually is easy if a careful history of the onset is obtained and a thorough examination for a focus of infection elsewhere in the body, as prostatitis, urethritis, tonsillitis or abscess, is made. Rheumatism has a greater tendency to jump from one joint to another and responds to the salicylates. It also is important to know whether a primary osteomyelitis is indicated by extreme tenderness on deep pressure over the bone. Early evacuation of pus here may save the joint. When rheumatism is suspected in children, this should be looked for, and it should be remembered that rheumatism under two years is rare.

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In the treatment of all acute joint disease, immobilization and rest are required. When too long continued, however, the procedure may render what otherwise would have been a useful joint, one in which there is ankylosis, and perhaps, too, in a useless position. Next to saving life and limb, the future usefulness of the joint is most important. Much depends on good judgment as to just how long a joint should be immobilized and how soon movements should begin. Besides ankylosis and contraction, other bad results to be avoided are: atrophy of the muscles, foot-drop, wrist-drop, scoliosis, and lateral motion, especially in the knee.

Special forms of arthritis require treatment peculiar to the infecting cause. It is obvious that the cause, if found, should be treated. Urethritis, prostatitis, tonsillitis, and intestinal stagnation all should have their appropriate treatment. In gonorrheal arthritis, the vaccine-treatment is a valuable aid. A beginning dose of 10 to 25 million dead gonococci should be injected, gradually increasing the dose and repeating every three to five days. In chronic types, give larger doses and less often. Opinions differ considerably as to the value of Bier's hyperemia.

The after-treatment consists principally in removing stiffness. Consideration of the muscles moving the joint and their nerve supply also is important. Deformity due to contraction of the muscles and tendons of the joint is overcome by gradual extension with weight and pulley, assisted by massage.

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Rheumatic Fever.—The principal indications in the treatment of rheumatic fever are:

1. To place the body at rest, so that the minimum amount of strain is likely to be thrown upon the tissues most likely to be affected: viz., the heart, joints, and muscles.
2. To neutralize the rheumatic toxin or to kill the specific cocci circulating in the body.
3. To reduce pyrexia and relieve the painful arthritis by means of general and local remedies.
4. To guard against cardiac inflammation.
5. To sustain the strength of the patient by means of suitable food.

6. To control hyperpyrexia.
7. To guard against relapses.
8. To restore the general bodily vigor and prevent further attacks.

In my opinion, the vaccine-treatment of rheumatic fever still is in the experimental stage. If a remedy of this character is to be used at all, I believe it should be an autogenous vaccine or the bacteriolytic serum obtained from cultures made from the throats of persons suffering from rheumatic angina. The administration of this serum seems not to be contraindicated by the existence of endocarditis, although it is advisable to exercise caution in using it in cases of high fever, pericarditis, and pleurisy. While I am not ready to recommend the use of this serum, to the exclusion of the salicylate and alkaline treatment, I would advise its trial in obstinate cases and in cases of malignant endocarditis of rheumatic origin.

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Chronic Articular and Muscular Rheumatism.—Chronic rheumatism seems to have no connection with the transient attacks of subacute rheumatism, and it must be distinguished also from arthritis deformans, myalgia, and the secondary lesions resulting from traumatism.

The joints most commonly affected are, the shoulder and the knee-joint, although other joints may suffer. This disease never leads to fibrous ankylosis.

Middle-aged people and older and those engaged in occupations where they are exposed to dampness are most liable to be affected by chronic rheumatism.

The general line of treatment recommended for arthritis deformans is of value in chronic articular rheumatism. The best success I have had in the treatment of both forms of chronic rheumatism is with the Mudlavia treatment, in conjunction with massage and the internal administration of equal parts of saturated solution of potassium iodide and English wine of colchicum. Of this mixture, I give from 10 to 20 drops in plenty of water three times a day, after eating. I have cured many cases both of chronic articular and of muscular rheumatism at Mudlavia by means of the mud-baths alone, and much sooner, I believe, than I could have done with any treatment without their aid. While I have tried hot air in joint involvement and dry-cups in lumbago, and other local aids, I have failed to find any one therapeutic measure equal to the mud-baths. I see to it that the bowels are kept open with cholagogs and laxative salines, reduce the urinary acidity by means of sodoxylin or sodium bicarbonate, and overcome intestinal toxemia, if marked, by means of some good intestinal antiseptic. I use at Mudlavia this compound creosote tablets, put up by The Abbott Laboratories, according to my formula.

In muscular rheumatism, rest and electrotherapy, galvanism, faradism, and the high-frequency current sometimes are of value. In chronic articular rheumatism, massaging the affected joints with a salicylic or anodyne ointment and following with the therapeutic light are beneficial. Pain, if severe, can usually be controlled with aspirin, antipyrine or, if necessary, codeine or Dover's powder.

Salicylates alone seem to have but little, if any, value in chronic rheumatism; alkalis and alteratives, especially potassium iodide, are of distinct value.

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Neuritis.—The acute stage of neuritis shows inflammation, with redness and infiltration of the surrounding tissues. This inflammation may be interstitial, with an accumulation of lymphoid elements between the nerve-bundles. In this type, the inflammatory process extends into the deeper parts of the nerve. The usual form is the perineural. In the parenchymatous type, we find the changes similar to those that are seen in the secondary, or Wallerian, degeneration, with the result of the nerve-fiber being cut off from the cell-body of the neurone to which it belongs.

The pathology is, that the "myelin becomes segmented and divides into small globules and granules, and the axis-cylinders become granular, broken, subdivided, and finally disappear. The nuclei of the sheath of Schwann proliferate, and ultimately the fibers are reduced to a state of atrophic tubes without a trace of normal tissue or structure."

Atrophy extends to the muscle supplied by the affected nerve, producing marked changes in the interstitial muscular tissues, in some cases only local in character. The nerve involved is sensitive to pressure through at least a part of its length. The greatest points of sensitiveness are at the bone exits or where it traverses tissues over prominent bones where the muscle is too thin to act as a buffer.

(*To be continued.*)

Among the Books

CHILD: "SENESCENCE AND REJUVENESCENCE"

Senescence and Rejuvenescence. By Charles Manning Child, of the Department of Zoology, University of Chicago. Chicago: The University of Chicago Press. 1915. Price $3.00.

If we should be asked to specify the most noticeable and significant movement in medical science in the past quarter-century, we should unhesitatingly declare that it is to be found in the growing recognition of the bearings of biology upon the problems of health and disease. Medicine is, in short, coming to appreciate what it ought to have appreciated long ago, if it had listened to other voices than those of its own fraternity, namely, that the forces of evolution and degeneration, which go ever hand in hand, are the twin factors lying at the root of every phenomenon of life and growth, and deformity and disease; that the quiet but ceaseless reaction between organism and environment is the motive-power at the back of all physical and mental processes; that the continual development of new structures and functions, at the expense of others which are just as continually passing, is attended by periods and conditions of stress which account for at least the organism's part in practically every pathologic conflict.

This is the subject-matter of Professor Child's book. Twenty-five years ago it would have had but scant, if any, interest for the medical man, for in those days, as we have said, medicine was not listening to the voice of the biologist and zoologist. Today she is straining eager ears for all that biology and zoology have to say to her, and the utterances of a man like Child will be received with intense interest by every thoughtful physician.

The work represents a thorough and scholarly investigation, largely at first hand, of the problems of senescence and rejuvenescence in the light of inductive biology and zoology. It would be as foolish as it would be futile for the reviewer to attempt even a cursory resumé of the data and arguments contained in a volume of five hundred pages, in which every sentence—every word, almost—is an indispensable and inseparable link in a cohesive chain of demonstration and reasoning.

Some of the author's conclusions—or, rather, his predications, for, like a true scientist, he offers no hard-and-fast conclusions—are exceedingly interesting and important. Perhaps the most significant is the bearing of his findings on the Weissmann and Lamarckian theories of heredity respectively. After pointing out that, according to his (the author's) investigations, the agamic and the gametic methods of reproduction are fundamentally identical, Child says: "If we accept this theory of reproduction, the Weissmann conception of germ plasm as a self-perpetuating entity, independent of other parts of the organism except as regards nutrition, becomes, not only unnecessary, but impossible." Again: "In general, biologists have been slow to admit the possibility of inheritance of acquired characteristics, because it conflicts with the Weissmann theory, but if we admit that the gametes are integral parts of the organism, there is no theoretical difficulty in the way of such inheritance."

It is an able and thought-provoking book, and we cordially commend it to all who are interested in the large problems of biology.

CUMMINGS: "MODERN FORMULARY"

The Modern Formulary. A Textbook of Chemistry as Applied to the Manufacture of Proprietary Specialties. By W. L. Cummings, Ph. D. Second edition. Newark, N. J.: The Physicians' Drug News Company. Price $3.00.

Perhaps the very best thing that can be said about this book is, that the formulas presented are genuine, inasmuch as they represent the final result of the actual testing-out of hundreds of them, their acceptance resting upon the tests, and upon numerous experiments, to determine the best methods of manipulation. That this feature of this formulary is singled out for its highest praise, does not in the least reflect upon the other features, all of which appeal to one—theoretically—as excellent. The distinguishing thing

about this particular feature indeed is its rarity, for, most formularies, unfortunately, are mere compilations from older sources, which themselves are compilations of the same kind; and so backward into the dim past, perpetuated, unauthoritative, untried—rubbish mostly.

To the experienced pharmacist, many of the explanations and directions given will appear superfluous. However, the book has been written for those who may be supposed not to have enjoyed the advantages of a chemical and pharmaceutical education, that is, the average intelligent layman, and every effort has been made to bring it within the understanding of the veriest neophyte in the art of manufacturing proprietary preparations for household use. It is intended for everyday use in the laboratory. A very comprehensive index remedies the grave defect, that no alphabetical order of arrangement has been attempted. In the present edition the greatest care has been exercised in the elimination and correcting of errors which inevitably will creep into a first edition.

BERGEY: "PRINCIPLES OF HYGIENE"

The Principles of Hygiene: A Practical Manual for Students, Physicians, and Health Officers. By D. H. Bergey, A. M., M. D. Illustrated. Fifth edition, thoroughly revised. Philadelphia and London: The W. B. Saunders Company. 1915. Price $3.00.

The regulation of personal and community hygiene has, in these latter days, become so essential and routine a part of the physician's duty that a comprehensive textbook upon the subject is almost a necessity to students of medicine. It manifestly is impracticable, of course, to write into a mere textbook all the flux of ever-changing detail that makes up the practical application of the science of hygiene. The best book is that which best presents the principles of the science, upon which the practitioner may build the superstructure of practical application which best suits his circumstances and time and needs.

Such a book is that of Doctor Bergey's, now issued in its fifth, revised, edition. It addresses itself to both parties concerned in community-hygiene. To the engineer and architect, it expounds the sanitary requirements involved in ventilation, heating, water-supply, and sewage-disposal; to the physician and health-officer, it imparts the information necessary to familiarize them with the advances made in hygienic practices in recent years. The author wisely refrains from attempting to cover the entire subject, but confines himself to those aspects which his experience has shown to be the most important for those for whom the book was written.

BACON: "OBSTETRICAL NURSING"

Obstetrical Nursing: A Manual for Nurses, Students, and Practitioners of Medicine. By Charles Sumner Bacon, Ph. B., M. D. With 123 engravings. Philadelphia and New York: Lea & Febiger. 1915. Price $2.00.

As the author very aptly points out in his preface, obstetrics is the branch of medicine, above all others, where the province of the physician and of the nurse overlap and merge. The physician, on the one hand, should understand all the details of obstetrical nursing, while, on the other hand, the nurse assumes some of the responsibilities of the physician, and, therefore, should have a thorough understanding of the medical and surgical side of the subject. Each ought to possess a working-knowledge of the other's art, for, each is, at times, obliged to assume the other's part, and both must work together in an interlocking fashion that is not counterparted in any other department of medicine or surgery.

It will be observed that the title of this book is not "Obstetrics for Nurses," but "Obstetrical Nursing." As a matter of fact, the author has not so much in view the nurse's side as he has the needs of the practitioner. His experience has taught him that, in his early years, the average physician is painfully ignorant of the art of obstetrics from the point of view of the lying-in room; for, he has had next to no practical training in this direction. The ordinary textbooks give but a very limited amount of attention to this branch of the art. It is to make up this lack on the part of the medical student and of the practitioner that Doctor Bacon has set himself in this book; and we heartily endorse the recognition of this lack as also the praiseworthy effort to supply the need.

SUNDERLAND: "THE HEART"

The Heart in Early Life. By G. A. Sunderland, M. D. London: Henry Frowde, Oxford University Press. 1914. Price $2.00.

Every diagnostician knows that there are marked and important differences between the

heart of an infant and the heart of an adult, differences that have a momentous bearing upon the diagnostic as well as upon the therapeutic aspect of a given medical case. In these two instances, the infant and the adult, we have, to be sure, the extreme poles of immaturity and of maturity—as exemplified in the heart—which are universally recognized and reckoned with. What is not so generally understood, however, is, that all the way between these two extremes there are going on modifications of heart structure and heart function, which render the period of childhood and early adolescence, so far as this organ is concerned, distinct from the period of adult life. This youthful period, from many points of view, is the most critical in the history of the heart. It is in early life that the heart is attacked by those infections that become the most common causes of organic disease in later years.

In view of these considerations, it is somewhat surprising that not more literature is devoted to a study of the adolescent heart, and, thus, withal, this book of Doctor Sunderland's assumes a most welcome place. It is an excellent, practical book, dealing with the subject in a modern, scientific and withal a common-sense fashion, The author has profited by all the more recent teaching on cardiology and improved instrumental methods, in the determination of his facts and the elucidation of his problems.

TOUSEY: "MEDICAL ELECTRICITY"

Medical Electricity, Roentgen Rays, and Radium. With a Practical Chapter on Phototherapy. By Sinclair Tousey, A. M., M. D. Second edition, revised and enlarged. With 798 illustrations, 16 in colors. Philadelphia and London: The W. B. Saunders Company. 1915. Price $9.00.

With the publication of the first edition of this work, Doctor Tousey, so to speak, became famous over night. From that time forward, Tousey and medical electricity were identified with each other in the same way that the late Kassabian and the x-ray were mentally associated. The present edition—thoroughly revised and very greatly enlarged—is evidence that Doctor Tousey rose to the obligations which his deserved popularity imposed upon him.

The book contains many excellent features that recommend it to the student and the practitioner, but perhaps the most conspicuous, as it is the most inclusive, is the completeness and comprehensiveness of the author's treatment of his subjects. It might almost be said to be a cyclopedia, as well as a textbook, of medical electricity. Roentgen-rays, and radium. Beginning at the very beginning, with the physics and principles of electricity and radiology, it does not leave the subject until the last word has been said about its clinical application, its technic, and its indications.

Doctor Tousey's book has already done much, and the latest edition will do yet more, toward insuring for medical electricity that dignified and adequate recognition which it richly merits. A subject like this, of course, lends itself very readily to diagrammatic and photographic illustration, and the artists, generously supported by the publishers, have not failed to avail themselves of this possibility to the limit.

JOHNSTON: "MEDICAL ANATOMY"

Medical Applied Anatomy: For Students and Practitioners. By T. B. Johnston, M. B., Ch. B. With 146 illustrations and 3 colored plates. London: A. & C. Black, Ltd. 1915. Price $1.80.

There are books aplenty devoted to surgical anatomy, but the physician who desires to refresh his memory on the many applications of anatomy to clinical phenomena often is hard put to it to find any information upon the subject, except by consulting the different sections of the larger textbooks of descriptive anatomy. Yet, for one practitioner who stands in need of such a book for surgical purposes, there are a hundred who need it, and need it badly, for purposes of medical diagnosis and interpretation. It is the object of the author of the present volume—who is a lecturer on anatomy at University College, London—to remedy this lack.

This book on applied anatomy regards the human body from the standpoint of the internist. Practical application is closely interwoven with anatomical description; special attention is devoted to the question of referred pain, while outlines of the development of certain parts of the body are included wherever they enable the reader to understand the adult body more fully. The book is well and generously illustrated; it also carries in parallel columns a glossary of the oldtime nomenclature and the B. N. A. set. This book should prove of great practical value to all who are engaged in the practice or in the clinical study of medicine.

Condensed Queries Answered

While the editors make replies to these queries as they are able, they are very far from wishing to monopolize the stage and would be pleased to hear from any reader who can furnish further and better information. Moreover, we would urge those seeking advice to report their results, whether good or bad. In all cases please give the number of the query when writing anything concerning it. Positively no attention paid to anonymous letters.

Queries

QUERY 6033.—"Specifics for Pertussis, Angina, and Neuralgia?" J. T., Delaware, after half a century's practice, presents what he believes to be a specific for whooping-cough.

Cantharides, powdered	grs. 15
Tartar emetic	grs. 10
Water	ozs. 16

Directions: Give 1 tablespoonful before meals and on going to bed. If it causes nausea, reduce the dose.

For angina pectoris, he gives, at once, 3 drops of amyl nitrate in a tablespoonful of water, then adds 5 drops to a half tumblerful of water and directs to give "1 teaspoonful of this every twenty minutes until pain is gone." All that remains, he says, is, to "collect my fee (if I can), take my hat and go home."

"Compare," our correspondent adds, "the simplicity of these two methods with those usually employed. But, then, one ought to learn something in fifty years of practice."

Next, a "specific for neuralgia" is offered, namely:

Magnesium phosphate	ozs. 2
Hot water	drs. 20

Directions: A teaspoonful (dr. 1) every ten or fifteen minutes, till pains abate, then every half hour, till all has been taken.

This remedy rarely, if ever, fails, according to the Doctor, and he further states, that the "neuralgia never returns."

"This mixture is equally a specific for painful menstruation when the pain is of a neuralgic type," the doctor asserts.

To be frank, doctor, we should hesitate to give a child 1-2 grain of cantharides, the amount that would be received in a tablespoonful of the preparation containing 15 grains to the pint of water. But, even though Spanish-fly powder is not soluble in water and not extracted by it, and the sediment be not shaken up, we should be very much afraid of setting up strangury or even hematuria. Can it be possible that this prescription has been transcribed inaccurately? The average dose for an adult is 1-2 grain, and an infant should receive proportionately very much less.

Then, again, amyl nitrate is absolutely insoluble in water; and, being an extremely diffusive, unstable liquid, evaporates rapidly; hence, while a patient might receive the benefit of the first 3 drops taken separately in water, he certainly would not derive much advantage by taking a teaspoonful of the 4 ounces of water to which the 5 drops have been added, and which you order to be taken every twenty minutes.

As a matter of fact, five minutes after the amyl nitrate is dropped into the glass, it would be difficult to recover a fraction of the amount; 2, 3 or 4 drops of amyl nitrate may be given in brandy or a hydroalcoholic vehicle, but just as good results follow the inhalation of 1, 2 or 3 drops.

Merck calls attention to the fact that amyl nitrate is so volatile, that it practically is impossible so to stopper a bottle that it will hold it without loss.

These comments are not made in the spirit of criticism, but because we really desire to know whether you find your method superior to those usually adopted.

As you say, a man practicing medicine fifty years "ought to learn something," and it is possible that you have excellent reasons for relinquishing the usual methods of administration.

QUERY 6034.—"Sodium-Ethylate. Callosities. Dosage of Thyroid Extract." J. A. C., Missouri, writes that he recently used up a whole vialful of sodium-ethylate solution in a case of multiple warts (there were 16), and most of them yielded. A few of the larger ones, however, were not completely destroyed, and he was forced to apply fuming nitric

acid. Now the warts are about gone and, he thinks, will disappear entirely in a few days. He has also used the salicylic-acid, alcohol, and collodion solution, but it never seemed satisfactory.

"After a few days," the Doctor continues, "the acid [? !] in the sodium ethylate solution seemed to collect around the stopper, although it was kept well corked. This, in my judgment, caused the preparation to lose some of its strength. On the whole, I should say, however, that this is a reliable preparation for the removal of warts generally, although possibly it is not infallible.

"2. One of my patients, past 65 years of age, is afflicted with callouses on the soles of his feet, and they are decidedly painful. The various corn salves and 'cures' do but little good. What can I do for him?

"3. A child now 2 1-2 years of age, a cretin, fell into my hands when it was two years old. It now weighs only about 16 pounds. It was obstinately constipated, its tongue protruded, it had a silly, idiotic expression, its movements were almost always incoordinated, the skin was leathery and wrinkled, its head dropped down on the shoulder (the neck not being strong enough to support it), the back was too weak to support the body very long at one time, and, besides, the child showed all the other usual train of symptoms.

"During the first year of its life, treatment consisted mainly in giving strong cathartics, to overcome the constipation, but failed. When I took charge, I overcame the constipation by means of injections of olive-oil. About eight weeks ago, I put the child on desiccated thyroid extract, gradually increasing the dose, until now it gets the equivalent of 2 1-2 grains of the gland twice a day. There has been a wonderful improvement: the tongue does not now protrude; the child has a normal, intelligent expression; it plays with its hands and seems interested in everything.

"However, while it is cutting a number of teeth now, it does not gain in weight, although taking plenty of good milk and malted milk, and other easily digested foods. Digestion and bowel action seem normal. The child does not talk and can not walk; the whole body has a soft, limber 'feel' like a dishrag, and I am not sure that it is improving as fast in this way as it should. The skin peeled off under this treatment, and it now looks about normal.

"Am I giving enough thyroid extract? Should I add other medicaments? (Am giving the calcium-lactophosphate tablets now.) About how long before I might expect the child to begin growing and increasing in weight, to walk, and so on?"

ANS. 1. It is impossible to prevent the deposit about the stoppers of dermal-caustic vials; unless they are protected with vaseline, there is a direct action upon the glass. We do not think, however, that the solution remaining in the bottle is rendered less active. We very rarely apply sodium ethylate to warts, but find it invaluable in the treatment of blood-filled growths.

ANS. 2. Callosities of the soles sometimes prove extremely rebellious to treatment. Salicylic acid in strong solution removes corneous epidermis, and we suggest, therefore, that the patient first soak his feet for twenty or thirty minutes in a 1 : 32 solution of magnesium sulphate, and then, after removing as much of the calloused skin as possible and drying well, apply a dermal solvent consisting of alcohol, drs. 2 1-2; extract of cannabis indica, grs. 10; salicylic acid, grs. 30; collodion, drs. 1 1-2. Apply with a brush twice daily, repeating the soaking of the feet every third evening. We believe that in a very short time the callosities will disappear. Should the parts become painful, suspend treatment for a few ways; then resume. Lactic acid has been used by this writer, with success. However, a very small quantity, only, should be applied at one time. Be sure that the patient wears properly fitting shows. As soon as the callosity has been removed, he should dust into the sock, each morning upon rising, a little zinc stearate.

When the callous is very thick, the best result may be secured by painting on a solution of caustic potassa. Several applications may be made within an hour, then the softened corium is removed by scraping or by shaving it off with a sharp knife. Great care is necessary.

Some writers recommend the continuous application of a 10- to 25-percent salicylic-acid-rubber plaster. After several days, this is removed and the foot soaked in a magnesium-sulphate or sodium-bicarbonate solution and the mass then rubbed away. This application may be repeated once or several times, according to the degree of thickening.

ANS. 3. We hardly should give a 30-month-old child more than 2 1-2 grains of desiccated thyroid gland each twenty-four hours. However, we should administer the nucleinated phosphates, two tablets three times a day, and 1-2 grain of papain and

pepsin after each meal; later adding arsenic to the thyroid gland. An excellent plan would be, to give 1-2 or 1 grain of desiccated thyroid gland and the arsenates in conjunction.

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QUERY 6035.—"Eczema Disappearing After Erysipelas." J. N., Ohio, recounts a little experience with weeping eczema in a man 50 years of age, whose legs were thus affected for many years, but healed spontaneously after an attack of erysipelas. This seeming cure has now lasted for six months, no signs of recurrence appearing to date. With this case in mind, our correspondent asks whether, in our opinion, it would not be justifiable to inoculate eczematous individuals with the streptococcus erysipelatus, in order to cure this stubborn disease.

The possibilities are that the cure, which you say has now lasted for the past six months, may prove permanent. There always is the probability, however, that the general constitutional condition which previously obtained may recur and the patient again have his eczema.

So far as is at present known, eczema in all probability is caused by pyogenic organisms normally found in the skin itself, and which become active and produce what we term "eczema" when the patient's resistance is markedly reduced as a result of some general derangement.

The reaction to a streptococcic infection, such as that of erysipelas, was sufficient, in all probability, to cause the destruction of the organisms producing the eczema; and, as the patient engendered antibodies sufficient to recover from his erysipelas, there also were produced antibodies against the organisms causing the eczema. Further, the general systemic reaction in the attack of erysipelas may have been such as to change the underlying pathological condition of his body, with the result that the eczema no longer is able to obtain a foothold.

However, in answer to your question as to the permissibility of inoculating the erysipelas streptococcus in order to cure eczema, we must say, definitely, "No," and for these principal reasons: (1) The impossibility of definitely limiting erysipelas. No one is justified in inoculating an individual with a disease that presents the high percentage of mortality that erysipelas does, for the purpose of curing or attempting to cure a purely localized, non-fatal disease—such as eczema. (2) You have no definite proof, nor can you guarantee to the patient, that, if he should recover from the erysipelas, his eczema will be cured, owing to the fact that he may have as before stated, some general constitutional derangement, as a result of which his eczema might persist. (3) The probabilities of a fatal outcome, if erysipelas be inoculated into an eczematous lesion, are much greater than if the patient had a simple erysipelas alone, because under such condition you have a mixed infection, the streptococci and staphylococci aiding one another, which is much more likely to result in a fatal issue than infection with either one alone.

This seeming coincidence which you report has been brought to our attention by several other men, but in each and every instance the infection was, as in your case, accidental, and, while in many of them the eczema was cured, in some cases it not only was not benefited, but became much more severe and extensive.

Unfortunately, we do not as yet possess sufficient knowledge to enable us to state definitely how the eczema disappeared. One can only theorize. If we had such definite knowledge and if we were able to limit an erysipelas absolutely, then, and then only, might such a procedure be justifiable; but until then this writer, personally, believes that such a course would constitute malpractice.

It has been known for many years that the toxins of streptococci, and similar organisms, have a tendency to cause a degeneration in certain living cells, and this has been proven, not by injecting the living organisms, but by injecting their toxins, which do not produce the disease; for example, the use of Coley's fluid, which is essentially a solution of the toxins of the streptococcus and bacillus pyocyaneus, in the treatment of malignant growths. The use of Coley's fluid might be justifiable in the treatment of eczema, but, surely, not the use of living streptococci.

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QUERY 6036.—"Intercostal Neuralgia or Subluxation of Vertebra?" H. R. W., New Mexico, was recently consulted by a lawyer, 78 years of age and of temperate habits. Some time ago, this man rode five miles on a hayrack and had to cross several ridges going and coming; he also was chilled. The following day, he experienced pain in his right side, for which kerosene was applied and the area blistered. A physician was then called, who pronounced it shingles. The man was in bed for three weeks, but got no relief. He became somewhat emaciated, consulted different doctors, including an Osteopath, and

finally went to some hot spring, without getting relief. At present his general health is good (as his looks show), but the pain continues intense at all times, and one spot near the spine is very tender and the pain here excruciating. There never has been any external manifestation, save for some half-dozen small pimples at one time over the seat of the pain, which extends from the spine to the median line. Our correspondent continues:

"I have never given this man a dose of medicine, but pronounced the first pain as intercostal neuralgia, and this has developed into a neuritis, probably of senile type, caused probably from pressure of the vertebra upon some nerve, owing to faulty posture during forty-five years of office-life. Exercise in the morning makes his pain feel better, but the effect is soon lost. What is this man's trouble, and what can I do to relieve him?"

It is just possible that there is a subluxation of the vertebra, sustained during that long ride on the hayrack; on the other hand, your diagnosis may be correct. The dermatosis which the first physician pronounced shingles was, we think, caused by the application of the kerosene. Still, it would be well to get a clear idea of the patient's body-chemistry. At the same time you should institute a very careful examination and see whether you can detect displacement of the vertebra. Test the reflexes and electrical reactions. Under any circumstances, outline diagrammatically any possible hypersensitive areas of the spine. Is there any hepatic or splenic congestion?

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QUERY 6037.—"Undeveloped Cervix." S. M. B., Iowa, has under observation a woman, 38 years of age, who, although her menstruation has been regular, has not conceived after nine months of married life. She experiences some ill feeling in the pelvic region during and for some days after menstruation. Her general health is good, and there is no tenderness in the region of the ovaries and uterus, except as stated. Examination about one week after the menstrual period revealed a cervix that appeared different from any this correspondent, as he writes, has ever seen. It has a healthy pink color, and there is no granulation, no ulcer, and no discharge, except a little healthy-looking mucus. The cervix itself has the shape of a small rubber ball with a minute opening. The woman says that it seems to her as though all the abdominal contents were "too high up" and that she would feel relieved if they could be drawn down. No cause for such sensation could be discovered. The abdomen is not full and no indication of an abnormal growth exists. We are asked whether a uterus with such cervix can be impregnated.

Without making a very thorough examination of the pelvic viscera, it would be impossible to express a definite opinion as to the possibility of this woman becoming pregnant. However, from the data supplied, we are inclined to believe that the cervical canal will have to be dilated before conception can take place. Not infrequently a "button" cervix may be regarded as evidence of an infantile uterus. However, a conical shape of the cervix, associated with a pinhole os does not necessarily predicate any other defect of the reproductive organs.

Try to locate the uterus. If you discover any malposition, correct it. In addition, dilate the cervix, either instrumentally or by the introduction of tupelo tents, making sure to fasten your tent securely. If tents are used, the patient must be examined every forty-eight hours.

Patency of the cervical canal may be ascertained by means of a sound; in fact, this writer repeatedly has secured satisfactory results by means of passing sounds every second or third day, selecting, at each sitting, one of the next-larger size. Of course, in this instance, the age of the woman must be borne in mind, and, if she is to become pregnant at all, the sooner this occurs, the better.

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QUERY 6038.—"Neuritis or Joint Lesion?" A. O. R., Oregon, last March stood on wet ground until his feet were thoroughly chilled. That evening he happened suddenly to throw his left hand over the shoulder, when an excruciating pain struck him in the latter, and ever since this pain is felt whenever he makes the "wrong motion." Otherwise, he can use the arm freely, even reaching over his head, but cannot put the left hand in the left hip-pocket or lay it on the right shoulder without experiencing that "cutting, excruciating pain." At night, the arm will grow tired when kept in one position, and he is awakened by the pain. After the pain in the shoulder subsides, which is in a minute or so, a dull pain remains in elbow, axilla, and up the side of the neck. This also usually passes in a short time, but at night it persists until, after many trials, a comfortable position has been found. One brother physician whom he consulted says

that it is "irritation due to too rapid heart action," while another calls it "brachial neuritis, which, with care, will disappear."

In June, the Doctor had an attack of congestion of the liver, which confined him to the house for several weeks, but at present his health is good. He is 62 years old. He lost 31 pounds during the attack in June and July, but has regained 18 pounds, which leads him to believe that he still has good vitality.

As you can readily understand, doctor, it is a most difficult matter for us, with our limited knowledge of conditions, to venture even a provisional diagnosis. It is just possible, of course, that a joint lesion was incurred when playing with the child; on the other hand, the condition may be brachial neuritis. The attack of hepatitis must not be forgotten; a more or less serious circulatory or metabolic disorder may be present. The fact that you have regained 18 pounds of lost weight shows conclusively that you can "come back."

It would be well to get the best confrère in your locality to make a thorough physical examination and report his findings. If possible, have the electrical reactions tested. Note the condition of the reflexes, also the area of the hepatic dulness. See whether there is any tenderness upon pressure about the shoulder or elbow or any observable abnormality. What is the character of the pain—dull and boring or lancinating?

As you are aware, sprains of the shoulder-joint are somewhat peculiar in character and frequently prove troublesome. Pain at the elbow is not frequently observed, but as a rule indicates synovitis. Generally there is injury to the internal lateral ligament.

The shoulder symptom may be slight, consisting chiefly of stiffness and pain on certain motions; these may increase in severity and the joint become stiff, or the joint may remain perfectly movable but extreme pain occur upon the execution of certain definite motions. The most difficult condition to diagnose is, irritability of the capsular ligament. Occasionally a synovitis, a tenosynovitis or a bursitis is met with. Only the most careful examination will enable us to differentiate periarthritis of traumatic origin.

Careful manipulation and the application of an ointment such as guimethol (guaiacol, methyl salicylate, menthol, lanolin, and petrolatum), besides putting the arm in a sling, supporting the tip of the elbow and preventing the dragging of the weight of the arm on the capsular ligament, may be tried. It would be well to have your urine examined. If an acidemia exists, symptoms will be distinctly modified by its correction.

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QUERY 6039.—"Vicarious Menstruation." C. O. R., Colorado, wishes to know whether anything can be done to make the blood come through the womb and vagina, instead of through the nose. He has advised dilatation of the cervix, but cannot get the patient's permission. "Anyhow," he enquires, "would that do any good, or is any medicinal treatment known to be successful?" The girl is 15 years old and menstruated (though with pain) for more than a year, when she began having nosebleed at, and for about a week previous to, the menstrual periods. She is now menstruating, but the nosebleed was so profuse for a week prior that her mother was afraid that "no blood would come the natural way." The mother always menstruated all right. The girl is thin and nervous, and has been rather delicate since her fourth year, when she had some stomach and bowel trouble. She is an ambitious student in the high school. While not now constipated, she was so formerly.

Unfortunately, we have not a clear-enough idea of conditions to discuss this matter very intelligently. In true vicarious menstruation, there is, as a rule, no uterine flow, but occasionally, in connection with the abnormal periodic hemorrhage, there may be a monthly secretion of colostrum, profuse leucorrhea or even diarrhea.

Hemorrhage from the nose, of course, is most frequently observed, while occasionally bleeding occurs at the site of a scar, an ulceration, the ear, conjunctivas, kidneys, bladder, larynx, respiratory and alimentary tracts, gums, stomach, intestines, and various other points. But, also, these hemorrhages may be subcutaneous, petechial points or ecchymoses forming.

As you will readily understand, any remedial procedure, to be effective, must be based upon a clear understanding of the causative disorder. It is more than likely that the subcutaneous injection of emetine will promptly control an epistaxis of this nature. In the intervals, practically always emmenagogs, especially those direct in their action, are indicated. Marked results have been secured from the prolonged administration of the arsenates with nuclein, viburnoid, and caulophylloid.

As to your patient, maintain thorough elimination, to start with. Apply to the nasal mucosa hamamelis and calendula (aqueous extracts), 1 part of each to 2 parts

of water; or instruct her to swab the nares morning and evening with this solution: Colorless fluid hydrastis, 1 ounce; aqueous extract of hamamelis, 1 ounce; glycerin, 1-2 ounce; water, 4 ounces.

It would be well to make a very thorough examination of the girl's pelvic viscera. Is there a tuberculous taint?

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QUERY 6040.—"Proper Procedure in Abortion-Case." J. W. S., New York, asks: "What is the proper procedure in the following case: A woman produces abortion by mechanical means. A few days later, the doctor is called in and elicits this fact. What should he do to protect himself from the dangers that might arise?"

This question is more easily asked than answered; but, naturally, what the physician does will be modified more or less by circumstances. However, first of all, he must endeavor to protect himself; therefore, when advised of the circumstances, he should, before making an examination or taking any other active step, insist upon the presence of another physician, and to him essential facts should be related fully. Some practitioners have felt themselves safe when they have secured a signed statement from the woman or an acknowledgment of her act in the presence of one or two competent witnesses. Sometimes, however, a woman strongly objects to making such a statement and expects the physician to hold inviolate the confidence she has reposed in him alone. Under certain circumstances, and with certain women, the average physician may feel inclined to take a chance and render the necessary service. However, there is no question that by so doing he places himself in an exceedingly dangerous position. This writer, under similar circumtances, would frankly explain to the woman the danger he would incur by undertaking to operate alone, and would try to convince her that for her own safety the presence of another physician was essential.

When a woman induces abortion and later sends for the doctor to stop the hemorrhage or to remove the retained placenta, she is in a "tight place," and it is impossible always to tell what the outcome may be. Should she die, there naturally is going to be considerable gossip (especially if she should happen to be unmarried) as to the cause of her decease, and the physician who attended her is very likely to be accused of producing the abortion. It is all very well to present her statement, but denials and explanations offered after the woman is dead have very little weight with the general public, whereas the attendance of another reputable practitioner or the procuring of a properly witnessed signed statement by the patient before operative interference is attempted renders the attendant's position impregnable.

We present this subject for discussion, believing that at some time or another practically every physician who has established a general practice has found himself in the position described by our correspondent.

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QUERY 6041.—"Probably Hysteria." B. F. S., Arkansas, presents the following data concerning a man who is "paralyzed in the lower limbs." His age is 45 years; height, 6 feet; usual weight, 168 pounds; apparently no loss; general health previous to the stroke and also at present, good; does not use tobacco or coffee and has no bad habits; is a school-teacher, married, father of seven children; sleeps well; disposition, cheerful. Near ancestors, two were crazy, or, at best, eccentric. The stroke occurred in 1913. For six months, there was not much improvement. He was treated by a local doctor, also by a chiropractic; has had no treatment whatever for eighteen months.

For eight years previous, the man had held a position as cashier in a bank, but lost the place very suddenly, when fear of starvation for his family caused him to worry and he jumped headlong into heavy, rough work. When he tried to rise from his bed one morning, he found he could not use his legs, and since then has used a wheel-chair. He can now use some of the muscles of his legs, move his feet a little; but cannot use crutches. At times, "small nerves in his face twitch."

This case is decidedly interesting, to say the least; however, after a very careful consideration of the clinical data presented, we are strongly impressed with the idea that this patient is hysterical and has no organic lesion. This writer knows of no pathologic lesion which would suddenly paralyze the lower limbs in the way described. A spinal hemorrhage certainly would, of course, manifest some other plain symptoms by which it could be diagnosed. Nevertheless, this is a possibility and should be investigated.

We should like to know the condition of his patellar, plantar, and ocular reflexes, and also the condition of his muscles, whether they are flabby or spastic, and whether they have wasted during the disease or not.

With such data at hand, we could make a more intelligent diagnosis. The condition of the body-chemistry should also be ascertained.